



Stybarrow Decommissioning and Field Management Environment Plan

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Acronym and Glossary

Term	Description
µPa	microPascal
ABF	Australian Border Force
AEP	Australian Energy Producers
AFMA	Australian Fisheries Management Authority
AHO	Australian Hydrographic Office
AIS	Automatic Identification System
ALARP	As low as reasonably practicable
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANSI	American National Standards Institute
ANZECC	Australian and New Zealand Environment and Conservation Council
API	American Petroleum Institute
APPEA	Australian Petroleum Production and Exploration Association
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ASBTIA	Australian Southern Bluefin Tuna Industry Association
AWJ	Abrasive water jet
BACI	Before-After-Control-Impact
BIA	Biologically Important Area
BP	Boiling point
BWM	Ballast Water Management
CCG	Cape Conservation Group
CEFAS	Centre for Environment, Fisheries and Aquaculture

Term	Description
CEM	Crisis and Emergency Management
CEO	Chief Executive Officer
CFA	Commonwealth Fisheries Association
CHARM	Chemical Hazard and Risk Management
CMT	Crisis Management Team
CRG	Community Reference Group
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CWTS	Controlled Waste Tracking System
DAWE	Department of Agriculture, Water and the Environment
DBCA	Department of Biodiversity, Conservation and Attractions
DC	Drill Centre
DGV	Default Guideline Value
DMIRS	Department of Mines, Industry Regulation and Safety
DNP	Director of National Parks
DoD	Department of Defence
DoT	Department of Transport
DP	Dynamic Positioning
DPIRD	Department of Primary Industries and Regional Development
DTM	Disconnectable Turret Mooring
EC50	Effective Concentration 50%
ECC	Emergency and Crisis Centre
EFL	Electrical Flying Lead
EMBA	Environment that may be affected
EMT	Emergency Management Team

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Term	Description
ENVID	Environmental hazard identification
Environment Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009
EP	Environment Plan
EPA	Environmental Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPO	Environmental Performance Outcome
EPS	Environmental Performance Standard
ESD	Ecologically Sustainable Development
FIFO	Fly-in Fly-out
FOB	Forward Operating Base
FPSO	Floating Production, Storage and Offloading
FRT	Field Response Team
FSO	Floating Storage and Offloading
GHG	Greenhouse Gas
GIS	Geographic information system
HazPlan	Western Australia State Hazard Plan for Maritime Environmental Emergencies
HFL	Hydraulic Flying Lead
HMA	Hazard Management Agency
HR	Human Resources
HSE	Health, Safety and Environment
HSEC	Health Safety Environment Committee
IAP	Incident Action Plan
IAPP	International Air Pollution Prevention
IGN	Industry Guidance Note
IMCRA	Integrated Marine and Coastal Regionalisation of Australia

Term	Description
IMO	International Maritime Organization
IMS	Invasive Marine Species
IMT	Incident Management Team
IOPP	International Oil Pollution Prevention
ISPP	International Sewage Pollution Prevention
IT	Information Technology
IUCN	International Union for the Conservation of Nature
JRCC	Joint Rescue Coordination Centre
JSA	Job Safety Assessment
JSCC	Joint Strategic Coordination Committee
JSS	Jumper Stroking System
KEF	Key Ecological Feature
kHz	Kilohertz
KPI	Key Performance Indicator
LC50	Lethal Concentration 50%
LED	Light emitting diode
MARPOL	International Convention for the Prevention of Pollution from Ships
MBES	Multi-beam echo sounder
MC	Measurement Criteria
MDO	Marine diesel oil
MEE	Maritime Environmental Emergencies
MEECC	Maritime Environmental Emergency Coordination Centre
MEER	Maritime Environmental Emergency Response
MEPS	Marine Environmental Protection Services
MNES	Matters of National Environmental Significance
MODU	Mobile Offshore Drilling Unit

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Term	Description
MOP	Marine Oil Pollution
MOSES	Marine Oil Spill Equipment System
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MSIC	Marine Security Identification Card
MTWA	Marine Tourism Western Australia
NatPlan	National Plan for Maritime Environmental Emergencies
NCWHAC	Ningaloo Coast World Heritage Advisory Committee
NEBA	Net Environmental Benefit Analysis
NEC	No Effect Concentration
NGERS	National Greenhouse and Energy Reporting
NLPG	National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds
NM	Nautical Mile
NMFS	National Marine Fisheries Service
NOAA	National Ocean and Atmospheric Administration
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NORM	Naturally Occurring Radioactive Material
NOTAM	Notice to Airmen
NOTMAR	Notice to Mariners
NOx	Nitrous oxides
NPI	National Pollutant Inventory
NRT	National Response Team
NT	Northern Territory
NWS	North West Shelf

Term	Description
NWXA	North West Exercise Area
OCNS	Offshore Chemical Notification Scheme
ODS	Ozone Depleting Substance
OPEP	Oil Pollution Emergency Plan
OPGGGS Act	Offshore Petroleum and Greenhouse Gas Storage Act 2006
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
OSRA	Oil Spill Response Agency
OSRC	Oil Spill Response Coordination
OSRL	Oil Spill Response Limited
OWR	Oiled Wildlife Response
PEC	Predicted Effect Concentration
PLONOR	Pose Little or No Risk to the Environment
PMS	Preventative Maintenance System
PMST	Protected Matters Search Tool
POLREP	Pollution Report
PoW	octanol/water partition coefficient
PPA	Pearl Producers Association
PPE	Personal protective equipment
PROWRP	Pilbara Region Oiled Wildlife Response Plan
PS	Performance Standard
PSZ	Petroleum Safety Zone
PTS	Permanent Threshold Shift
PTW	Permit to Work
RCC	Rescue Coordination Centre
ROV	Remotely Operated Vehicle
RS	Response Strategy
SCAT	Shoreline Cleanup and Assessment Technique
SDU	Subsea distribution unit

Term	Description
SEEMP	Ship Energy Efficiency Management Plan
SEL24h	Sound Exposure Level over 24 hours
SHP	State Hazard Plan
SIMAP	Spill Impact Mapping and Analysis Program
SITREP	Situation Report
SMEEEC	State Maritime Environmental Emergency Coordinator
SOLAS	International Convention for the Safety of Life at Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
SOx	Sulphur oxides
SPL	Sound Pressure Level
SSS	Side-scan Sonar
STCW95	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
TBOSIET	Tropical Basic Offshore Safety Induction and Emergency Training
TRP	Tactical Response Plan
TTS	Temporary Threshold Shift
UK	United Kingdom
UTA	Umbilical Termination Assembly
UXO	Unexploded ordnance
WA	Western Australia State Hazard Plan for Maritime Environmental Emergencies
WAFIC	Western Australian Fishing Industry Council
WAOWRP	Western Australian Oiled Wildlife Response Plan
WI	Water Injection
YMAC	Yamatji Marlpa Aboriginal Corporation

1 Introduction

1.1 Proposed Activity

Woodside Energy (Australia) Pty Ltd (Woodside) as Titleholder under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Commonwealth) (referred to as the Environment Regulations), proposes to:

- remove subsea infrastructure within Production Licence WA-32-L
- continue field management of Stybarrow subsea infrastructure until final decommissioning is complete.

This activity 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 to meet the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGGS Act) as administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

1.2 Woodside and 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 decommissioning the Stybarrow field and associated infrastructure were conducted originally by BHP Petroleum. The merger consisted of a change of control of BHP Petroleum International Pty Ltd (holding company for BHP global petroleum business) via a share sale to Woodside Petroleum Ltd. All BHP Petroleum entities holding Australian petroleum titles were 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.

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

1.3 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.
- The petroleum activities are performed in a manner consistent with the principles of ecologically sustainable development (ESD) (as defined in Section 3A of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)).

The EP describes the process used by Woodside to identify and evaluate potential environmental impacts and risks arising from the petroleum activities and defines activity specific Environmental Performance Outcomes (EPOs), Performance Standards (PSs) and Measurement Criteria (MCs) to be applied to manage the impacts and risks to ALARP and acceptable levels. These form the basis of the implementation strategy, defined in **Section 11** for monitoring, auditing, and managing the petroleum activities to be performed by Woodside and its contractors. This EP documents and considers consultation with relevant authorities, persons, and organisations.

1.4 Scope of this Environment Plan

A detailed description of the petroleum activity is provided in **Section 3**. The spatial boundary of the petroleum activity has been described and assessed using the operational area, which is described in **Section 3.3**.

The scope of this EP does not include the movement of the project vessels outside of the operational area. These activities will be performed in accordance with other relevant maritime and aviation legislation, most notably the *Navigation Act 2012* and *Civil Aviation Act 1988*.

1.5 Overview of Health, Safety and Environmental Management System

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 A**),
- Woodside (PetDW) Management System,
- Woodside (PetDW) Health, Safety and Environment (HSE) Standard,
- any specific commitments laid out in this EP.

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 11(4) 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
The location of the activity	Section 3.2
A description of the receiving environment	Section 4
A description of the activity	Section 3
Details of the environmental impacts and risks	Sections 7 & 8
The control measures for the activity	Sections 7 & 8
The arrangements for ongoing monitoring of the titleholder’s environmental performance	Sections 7 & 8 Section
Response arrangements in the oil pollution emergency plan	Section 11
Consultation already undertaken and plans for ongoing consultation	Section 5
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 10A(a): <i>is appropriate for the nature and scale of the activity</i>	Regulation 13: <i>Environmental Assessment</i>	The principle of 'nature and scale' applies throughout the EP	Section 3 Section 4 Section 5 Section 6 Section 7 Section 8
	Regulation 14: <i>Implementation strategy for the environment plan</i>		
	Regulation 16: <i>Other information in the environment plan</i>		
Regulation 10A(b): <i>demonstrates that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable</i>	Regulation 13(1)–13(7): <i>13(1) Description of the activity 13(2)(3) Description of the environment 13(4) Requirements 13(5)(6) Evaluation of environmental impacts and risks</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 3 Section 4 Section 5 Section 6 Section 7 Section 8
Regulation 10A(c): <i>demonstrates that the environmental impacts and risks of the activity will be of an acceptable level</i>	<i>13(7) Environmental performance outcomes and standards</i> Regulation 16(a)–16(c): <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>		
Regulation 10A(d): <i>provides for appropriate environmental performance outcomes, environmental performance standards and measurement criteria</i>	Regulation 13(7): <i>Environmental performance outcomes and standards</i>	Environmental Performance Outcomes Environmental Performance Standards Measurement Criteria	Section 7 Section 8
Regulation 10A(e): <i>includes an appropriate implementation strategy and monitoring, recording and reporting arrangements</i>	Regulation 14: <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 10 Section 11 Appendix D (OPEP)
Regulation 10A(f): <i>does not involve the activity or part of the activity, other than</i>	Regulation 13 (1)–13(3): <i>13(1) Description of the activity 13(2) Description of the environment</i>	No activity, or part of the activity, undertaken in any part of a	Section 4 Section 7 Section 8

Criteria for Acceptance	Content Requirements / Relevant Regulations	Elements	Section of the EP
<p><i>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></p>	<p><i>13(3) Without limiting [Regulation 13(2)(b)], particular relevant values and sensitivities may include any of the following:</i></p> <p><i>(a) the world heritage values of a declared World Heritage property within the meaning of the EPBC Act</i></p> <p><i>(b) the national heritage values of a National Heritage place within the meaning of that Act</i></p> <p><i>(c) the ecological character of a declared Ramsar wetland within the meaning of that Act</i></p> <p><i>(d) the presence of a listed threatened species or listed threatened ecological community within the meaning of that Act</i></p> <p><i>(e) the presence of a listed migratory species within the meaning of that Act</i></p> <p><i>(f) any values and sensitivities that exist in, or in relation to, part or all of:</i></p> <p><i>(i) a Commonwealth marine area within the meaning of that Act; or</i></p> <p><i>(ii) Commonwealth land within the meaning of that Act.</i></p>	<p>declared World Heritage property.</p>	
<p>Regulation 10A(g):</p> <p><i>(i) the titleholder has carried out the consultations required by Division 2.2A</i></p> <p><i>(ii) the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate</i></p>	<p>Regulation 11A:</p> <p><i>Consultation with relevant authorities, persons and organisations, etc.</i></p> <p>Regulation 16(b):</p> <p><i>A report on all consultations between the titleholder and any relevant person</i></p>	<p>Consultation in preparation of the EP</p>	<p>Section 5</p>
<p>Regulation 10A(h):</p> <p><i>complies with the Act and the regulations</i></p>	<p>Regulation 15:</p> <p><i>Details of the Titleholder and liaison person</i></p> <p>Regulation 16(c):</p> <p><i>Details of all reportable incidents in relation to the proposed activity.</i></p>	<p>All contents of the EP must comply with the OPGGS Act and the Environment Regulations</p>	<p>Section 1.8</p>

1.8 Titleholder Details

The nominated Titleholder for this activity is Woodside Energy (Australia) Pty Ltd. The non-operating titleholder is:

- Woodside Energy Ltd.

In accordance with Regulation 15(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 15(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 15(3) of the Environment Regulations.

Table 1-4: Titleholder's nominated liaison person

Name	Steve Jeffcote
Position	Australian Operations Environment Manager
Business address	11 Mount St, Perth, Western Australia 6000
Telephone number	1800 442 997
Email address	feedback@woodside.com.au

2 Legislative Framework

2.1 Commonwealth Legislation

Environmental aspects of petroleum activity in Commonwealth waters are controlled by two main statutes, the OPGGS Act and the EPBC 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 B** of this EP.

2.1.1 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 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 2.2A, 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.

Under subsection 572(3) of the OPGGS Act, 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. Under subsection 572(7), 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. Section 572(3) requires the removal of property when it is no longer used, unless NOPSEMA has accepted alternative

arrangements. The *Guideline: Offshore Petroleum Decommissioning* (Department of Industry, Science and Resources, 2022) provides information on the circumstances where alternative arrangements may be accepted.

Under subsection 270(3) of the OPGGS Act, before title surrender, 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.

All Stybarrow subsea infrastructure WA-32-L will be removed before 31 March 2025, in accordance with General Direction 833 (see **Section 2.1.1.1** below) and 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.

2.1.1.1 General Direction 833

On the 30 August 2021, NOPSEMA issued Woodside (formerly BHP) with General Direction 833 under Section 574 of the OPGGS Act in relation to decommissioning of infrastructure relating to the Stybarrow field within petroleum title WA-32-L. **Table 2-1** outlines the directions in General Direction 833, and Woodside's intention for addressing each of these directions, either under this EP or under other separate Stybarrow decommissioning EPs.

This EP covers the removal of majority of infrastructure relating to the Stybarrow field within WA-32-L and includes the ongoing maintenance of this infrastructure in WA-32-L until final decommissioning and surrender of the title. Other Stybarrow EPs include:

- Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007)
- Stybarrow Plug and Abandonment EP (BHPB-00SC-N000-0005)

Table 2-1: General Direction 833

Direction	Woodside's Intentions relating to Direction 833
<p>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.</p>	<p>The plug and abandonment of wells subject to Direction 1 will be the subject to the Stybarrow Plug and Abandonment EP. Refer to Section 3.5 for further information on the timing for submission of the EP for plug and abandonment activities. These activities will be completed 30 September 2024.</p> <p>The removal of Xmas trees and wellheads by vessel is within the scope of this EP. However, plug and abandonment of the wells subject to Direction 1 requires the Xmas trees and wellheads be in place. As such, removal of the Xmas trees and wellheads will not be done until the wells have been successfully plugged. Xmas trees and wellheads may also be removed by a MODU, in which case the activities will be covered under the Stybarrow Plug and Abandonment EP.</p>
<p>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>	<p>This EP covers removal activities for almost all equipment subject to General Direction 833, as outlined in Table 3-5.</p> <p>The Stybarrow End State Decommissioning EP is seeking abandonment <i>in situ</i> is proposed for the:</p> <ul style="list-style-type: none"> ▪ Disconnectable turret mooring (DTM) mooring anchors, which are embedded in the seabed ▪ Riser base anchor suction piles, which are embedded in the seabed ▪ Suction pile for the water injection manifold, which is embedded in the seabed. ▪ Eskdale-1 Wellhead
<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.</p>	<p>The scope of this EP covers activities to inspect and maintain the equipment in WA-32-L until it is removed, or alternatives to full removal are accepted. As described in Section 3.8 surveys undertaken to inform infrastructure decommissioning indicate the infrastructure is in good condition and no planned maintenance activities will be required prior to equipment being removed.</p>

Direction	Woodside’s Intentions relating to Direction 833
<p>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.</p>	<p>Woodside applies the same definition for the term “natural resources”¹ as is used in policy <i>Section 270 Consent to Surrender - NOPSEMA advice</i> (NOPSEMA, 2022a).</p> <p>Woodside will undertake final environmental surveys (Section 3.7.8 and Section 3.8.1). Data will be collated from seabed clearance surveys, ROV images and sediment sampling to inform what, if anything, needs to be done to provide for the conservation and protection of natural resources in WA-32-L relevant to the Stybarrow field development.</p> <p>Section 7.6.6 outlines commitments for meeting requirements of Direction 5. Section 11.10.2 describes Woodside’s external reporting commitments for Direction 4.</p>
<p>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.</p>	<p>Woodside intends to undertake final environmental surveys (Section 3.7.8 and Section 3.8.1). Data will be collated from seabed clearance surveys, ROV images and sediment sampling to inform what, if anything, needs to be done to make good any damage to the seabed or subsoil in WA-32-L relevant to the Stybarrow field development.</p> <p>Section 7.6.6 outlines commitments for meeting requirements of Direction 5. Section 11.10.2 describes Woodside’s external reporting commitments for Direction 5.</p>
<p>Direction 6:</p> <ul style="list-style-type: none"> ▪ Submit to NOPSEMA on an annual basis, until all direction 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). 	<p>This EP is intended to be the final decommissioning EP for the Stybarrow field and the supporting permissioning document for the eventual surrender of WA-32-L. Section 11.10.2 describes Woodside’s external reporting commitments, including meeting the requirements of Direction 6.</p>

2.1.1.2 Alternatives to Full Removal

Woodside is considering alternatives to full removal for some equipment that is embedded in the seabed (e.g., suction piles and anchors). Woodside understands that leaving equipment *in situ* is not consistent with the base case for decommissioning of the Stybarrow field in accordance with General Direction 833. Recalling the *Guideline: Offshore Petroleum Decommissioning* (Department of Industry, Science, Energy and Resources, 2022) and the *Section 572 Maintenance and Removal of Property* policy (NOPSEMA, 2022b), Woodside will submit the Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007) [End State EP] to NOPSEMA proposing an alternative to full removal for the DTM anchors, suction piles and one wellhead. The End State EP will demonstrate that abandonment *in situ* of this equipment yields equal or better environmental outcomes compared to full removal.

¹ The Section 270 NOPSEMA advice - Consent to surrender title (NOPSEMA, 2022a) applies the same meaning to “natural resources” as in Article 77 of the United Nations Convention on the Law of the Sea 1982, which states “*The natural resources referred to in this Part consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed of the subsoil.*”

Upon assessment of the Stybarrow End State Decommissioning EP, if any equipment is not accepted for abandonment *in situ*, Woodside will conduct an assessment to determine whether resubmission of this EP is required, or if removal of that equipment can be conducted through management of change, in accordance with the procedure outlined in Section 11.8.5.

2.1.2 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 a number of conditions set for the action, which were consolidated in 2015. The consolidated conditions are provided in **Appendix B**, 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>1) The person taking the action must submit for the Minister's approval an oil spill contingency plan to mitigate the environmental effects of any hydrocarbon spills. The oil spill contingency plan must include:</p> <ul style="list-style-type: none"> a) The types of dispersants, protective booms, clean up gear, and related equipment to be used in the event of an oil spill and their storage arrangements b) A demonstrated capacity to deploy oil spill response equipment within 12 hours; c) Training of staff in oil spill response measures; d) Identification of sensitive areas, in particular, Ningaloo Marine Park, and the specific response measures for these areas; and e) The reporting of oil spill incidents. 	<p>The oil pollution emergency plan (OPEP) and this EP will constitute the oil spill contingency plan required by EPBC 2004/1469 condition 1.</p>
<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) (this plan) ▪ Stybarrow Well Plug and Abandonment EP (BHPB-00SC-N000-0005) ▪ Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007) <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 embedded in the seabed in accordance with the <i>Guideline: Offshore Petroleum Decommissioning</i> (Department of</p>

EPBC 2004/1469 Condition	Relevance to Petroleum Activities described in this EP
	Industry, Science, Energy and Resources, 2022) and <i>Section 572 Maintenance and Removal of Property</i> (NOPSEMA, 2022b) policy. The Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007) is the permissioning document for the deviation.
<p>7) The person taking the action may choose to revise a management plan approved by the Minister under conditions 1, 2, 3 or 6 without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the person taking the action makes this choice they must:</p> <ul style="list-style-type: none"> i) Notify the Department in writing that the approved plan has been revised and provide the Department with an electronic copy of the revised plan; ii) Implement the revised plan from the date that the plan is submitted to the Department; and iii) For the life of this approval, maintain a record of the reason the person taking the action considers that taking the action in accordance with the revised plan would not be likely to have a new or increased impact. 	<p>The management of change process that will be applied to this EP is described Section 11.8.5 This process considers triggers for submission of a revision of this EP to NOPSEMA in accordance with regulation 17 of the Environment Regulations, including:</p> <ul style="list-style-type: none"> ▪ Significant modification or new stage of activity ▪ New or increased environmental impact or risk ▪ Change in titleholder

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 **Sections 4.6.3** and **9**.

2.1.3 Sea Dumping Act 1981

The *Sea Dumping Act 1981* regulates the loading and dumping of waste at sea and the creation of artificial reefs in Australian waters. Australian waters stretch from the low-water mark of the Australian shoreline out to 200 nm. It does not include waters within the limits of a state or territory.

None of the activities within the scope of this EP require permission under the *Sea Dumping Act 1981*. Woodside will submit an application, where required, for a sea dumping permit to the relevant regulator for the equipment within the scope of the Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007).

2.2 State Legislation

In the event of a hydrocarbon release from a tank rupture from a vessel collision (**Section 8.2**), there is the potential for the release to impact State waters and shorelines. Relevant state legislation is listed in **Appendix B**.

2.3 Environmental Guidelines, Standards and Codes of Practice

Several industry standards, codes of practice, guidelines and international conventions are relevant to environmental management of the Petroleum Activity. These are listed in **Appendix B**.

2.4 Surrender of Petroleum Title

Woodside intends to surrender WA-32-L at the completion of the activities in the Stybarrow decommissioning EPs described in **Section 3.5**. An application to surrender the title will be made to the National Offshore Petroleum Titles Administrator (NOPTA) and the Joint Authority.

NOPSEMA provides advice to the Joint Authority when an application to surrender a title is made. NOPSEMA's advice includes confirmation as to whether the titleholder has satisfied relevant environmental management requirements, in particular the requirements of Section 270(3)(e) and Section 270(3)(f) of the OPGGS Act. NOPSEMA's Section 270 Consent to surrender title - NOPSEMA advice (2022a) identifies a number of criteria that NOPSEMA consider when advising the Joint Authority on applications to surrender petroleum titles. As this EP is planned to be the final EP for the Stybarrow field development, the relevant requirements in section 270 of the OPGGS Act are set out in **Table 2-3**. 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 **Section 3.8.2**.

Section 11.10.2 describes Woodside's external reporting commitments, including meeting the requirements of Section 270 of the OPGGS Act.

Table 2-3: Section 270 Consent to surrender title - NOPSEMA advice (2022a) policy expectations and arrangements

Section 270 Policy Expectations	Arrangements to Address Policy Expectations
The registered holder of the permit, lease, or licence has, to the satisfaction of NOPSEMA, removed or caused to be removed from the surrendered 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	Most of the equipment within WA-32-L will be removed in accordance with General Direction 833. Woodside is seeking acceptance of an End State EP to abandon in situ the suction piles, DTM anchors and one wellhead in accordance with NOPSEMA's Section 572 Maintenance and Removal of Property (2022b). The abandonment in situ is described in Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007). Once the equipment removal activities within the scope of this EP have been completed and the Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007) is accepted, Woodside will have met the requirement to remove property or make arrangements that are satisfactory to NOPSEMA.
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	All wells will be plugged and abandoned to the satisfaction of NOPSEMA. Refer to Section 3.5 for details on the Stybarrow Well Plug and Abandonment EP (BHPB-00SC-N000-0005).
The registered holder of the permit, lease or licence has provided, to the satisfaction of NOPSEMA, for the	In the context of this EP, Woodside applies the same meaning to natural resources as NOPSEMA: <i>"the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to</i>

Section 270 Policy Expectations	Arrangements to Address Policy Expectations
<p>conservation and protection of the natural resources in the surrender area.</p> <p>When determining if titleholders have provided for the conservation of natural resources, NOPSEMA considers:</p> <ul style="list-style-type: none"> ▪ the principles of ecologically sustainable development (as defined in Section 3A the EPBC Act) ▪ whether environmental impacts and risks are demonstrated to be managed to a level that is ALARP and acceptable ▪ relevant requirements have been met 	<p><i>sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil.</i>"</p> <p>Woodside has extracted the known commercially viable petroleum resources from the seabed and will have permanently plugged and abandoned the wells within WA-32-L. These actions have not resulted in damage to the remaining mineral and other non-living resources within WA-32-L (e.g., renewable energy resources).</p> <p>Environmental monitoring to date (outlined in Section 4.4.1) shows low levels of contamination within the field, which were generally consistent with background levels; evidence of contamination was restricted to small areas around drilling centres (Cardno, 2019). As such, Woodside predicts there is no damage to the living natural resources within WA-32-L.</p> <p>Woodside intends to undertake an environmental monitoring survey following decommissioning which will again assess the natural resources within the field and compare them to natural (control) locations (refer to Section 3.8.2). Woodside will undertake further investigations and consider mitigations if there is clear evidence that living natural resources in the field are not consistent with natural conditions (Section 7.6.6).</p>
<p>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.</p> <p>When determining if titleholders have made good damage to the seabed, NOPSEMA considers:</p> <ul style="list-style-type: none"> ▪ the principles of ecologically sustainable development (as defined in Section 3A the EPBC Act) ▪ the titleholder’s intent to achieve a clear seabed ▪ whether environmental impacts and risks are demonstrated to be managed to a level that is ALARP and acceptable 	<p>Woodside considers making good any damage to the seabed to be <i>“Make good any damage ... unacceptable impacts and risks to the seabed and subsoil have been remediated to enable future unrestricted access, beneficial use and re-release for future use”</i>.</p> <p>EPs for petroleum activities in WA-32-L have been in place following the introduction of the Environment Regulations. Acceptable levels of impact and risk to the seabed have been addressed in these EPs and accepted by NOPSEMA.</p> <p>Environmental monitoring in the Stybarrow field to date shows low levels of contamination within the field, which were consistent with background levels (Cardno, 2019). Woodside intends to undertake an environmental monitoring survey following decommissioning which will again assess the natural resources within the field and compare them to natural (control) locations (refer to Section 3.8.2). Woodside will undertake further investigations and consider mitigations if there is clear evidence of unacceptable damage to the seabed (Section 7.6.6).</p> <p>The removal of equipment, along with the equipment abandoned in situ (largely buried), is consistent with a clear seabed and does not prevent future activities in WA-32-L such as:</p> <ul style="list-style-type: none"> ▪ Trawl fishing ▪ Offshore construction (e.g., offshore wind generation) ▪ Re-release as petroleum exploration and production titles

3 Description of the Activity

3.1 Overview

This section has been prepared in accordance with Regulation 13(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 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 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 lost buoyancy at some point between May 2016 and October 2016 and lies on the seabed in approximately 825 m water depth with risers still attached. Following this event, the riser buoyancy modules were removed from the DTM to eliminate any buoyant risk.

Within the scope of this EP, Woodside proposes to:

- remove subsea infrastructure (detailed in **Section 3.6**) within the Stybarrow field in Production Licence WA-32-L
- remove wellheads and associated infrastructure (detailed in **Section 3.7.4**) within Production Licence WA-32-L²
- continue field management scopes (detailed in **Section 3.8**) on the subsea infrastructure, as required.

A detailed inventory of subsea infrastructure and wellheads to be removed under the scope of this EP is provided in **Table 3-5**.

3.2 Location of the Activity

The Stybarrow field is located within Production Licence WA-32-L, located in Commonwealth waters, around 55 km north-west of Exmouth, Western Australia and in water depths of about 810 m – 850 m (**Figure 3-1**).

The nearest point of the Stybarrow operational area to mainland shore is about 37 km (near the tip of North West Cape). The relative distances of key islands/mainland from the closest point in the operational area are provided in **Table 3-1**.

Table 3-1: Distance from operational area to key islands and mainland features

Key Island or Mainland Feature	Distance and Direction from Operational Area
Ningaloo World Heritage Area	24 km south
Muiron Islands	52 km east-south-east
Exmouth	56 km south-south-east
Serrurier Island	84 km east

² Note there is an option in the Stybarrow Plug and Abandonment EP to remove wellheads and associated infrastructure with the MODU, following plugging activities. Where removal is completed by a vessel, activities will be covered under this EP.

Key Island or Mainland Feature	Distance and Direction from Operational Area
Thevenard Island	115 km east
Onslow	130 km east
Barrow Island	163 km east-north-east

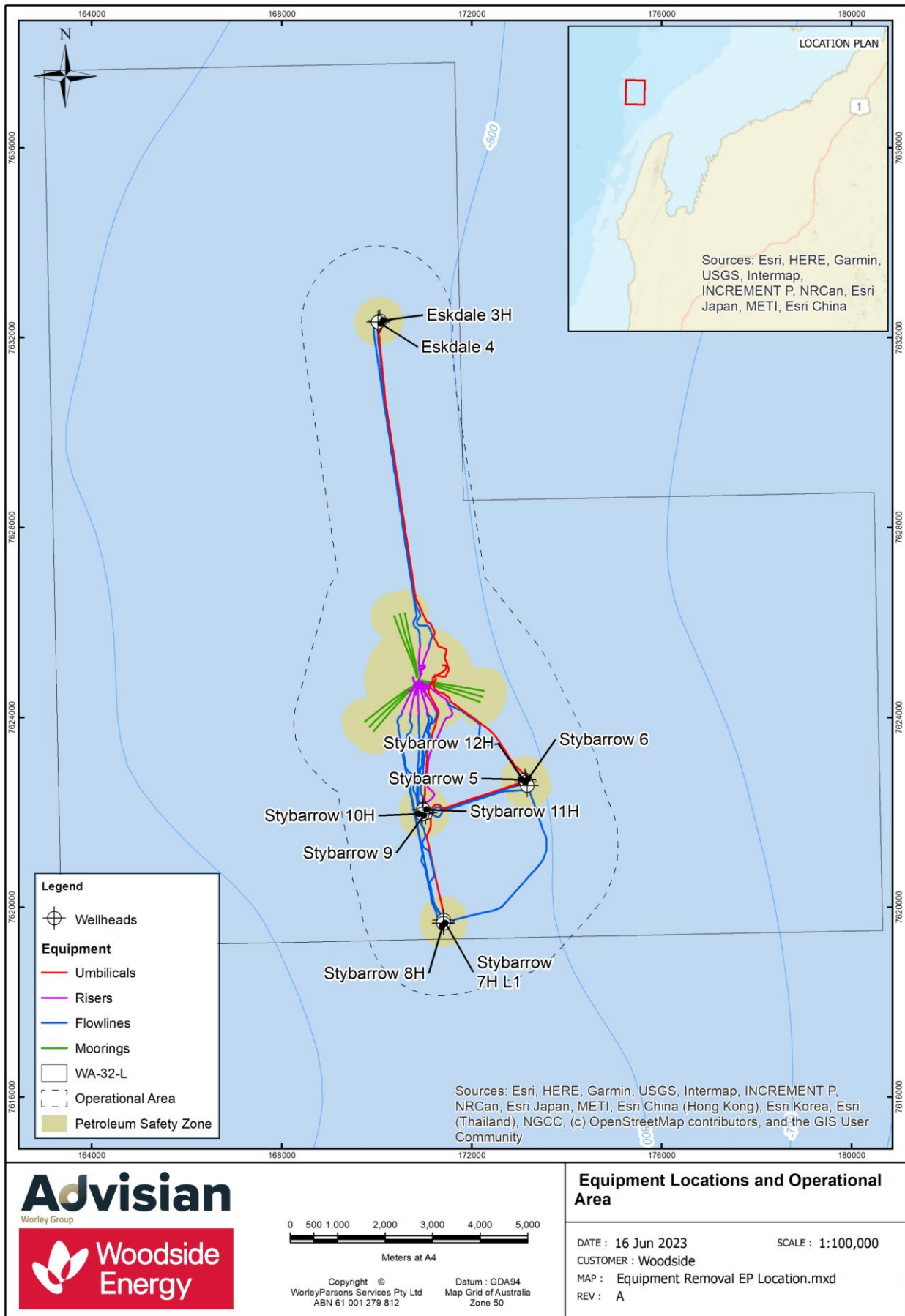


Figure 3-1: Location of the petroleum activity and operational area

3.3 Operational Area

The operational area shown in **Figure 3-1** is the spatial boundary of the petroleum activity, defined by the impacts and risks assessed and managed by this EP. The operational area includes the area encompassing a 1,500 m radius around the subsea infrastructure and wellheads within Commonwealth waters.

A temporary 500 m radius exclusion zone will be maintained around the project vessels during operations.

A series of gazetted petroleum safety zones (PSZs) are in place around selected infrastructure, as shown in **Figure 3-1** and listed in **Table 3-2**. Third parties are not permitted within these zones without permission. Woodside intends to request these PSZs be extinguished when WA-32-L is surrendered.

Table 3-2: PSZs and associated equipment within WA-32-L

Equipment	PSZ Radius (m)
DTM	1,134
Anchor 1 – 9	500
Stybarrow drill centre A wells 12 & 13	500
Stybarrow drill centre B wells H3, H4 & L1	500
Stybarrow drill centre C wells H1 & H2	500
Eskdale drill centre D wells EG1 & EH1	500

3.4 Timing of the Activity

The petroleum activity comprises subsea infrastructure removal and field management, with timings defined below in **Figure 3-2**.

The 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). Removal of field infrastructure will be undertaken progressively, aligned with operational requirements, and may be undertaken concurrently with plugging and abandonment of the wells described in the Stybarrow Plug and Abandonment EP (BHPB-00SC-N000-0005). Removal of well infrastructure (Xmas trees and wellheads) will occur following plugging and abandonment of the wells.

Following subsea infrastructure removal activities, Woodside will undertake any required surveys or environmental sampling within twelve months. **Section 11.10.2** describes Woodside’s external reporting commitments, including meeting the requirements of General Direction 833.

3.4.1 SIMOPS

There is potential for simultaneous operations (SIMOPS) to occur between the Petroleum Activity and other decommissioning activities, such as activities defined in the Stybarrow Plug and Abandonment EP. Potential cumulative environmental impacts from SIMOPS are assessed in this EP and the Stybarrow Plug and Abandonment EP. Woodside has developed the Stybarrow Facilities Decommissioning SIMOPS Management Plan to manage SIMOPS.

If SIMOPs were to occur, a maximum of four vessels and a MODU may be in the field at the same time based on:

- One MODU and one support vessel
- Two equipment removal vessels
- One supply vessel.

3.5 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 3-3** with an indicative timetable presented in **Figure 3-2**.

Woodside intends to apply to surrender WA-32-L at the conclusion of the decommissioning activities (**Section 2.4**). Environmental monitoring to support the application to surrender WA-32-L will be undertaken within the scope of this EP (**Section 3.8.2**).

Table 3-3: Stybarrow decommissioning EPs, activities, commencement and end details

Environment Plan	Activities	EP Commencement	EP End
Stybarrow Operation Cessation Environment Plan (STHSE-E-0001)	On-going management of the Stybarrow Field subsea equipment in cessation phase until approval of decommissioning activities. Cessation phase aspects include physical presence of remaining infrastructure, subsea inspections of infrastructure and vessel operations associated with cessation activities.	Currently in force EP accepted by NOPSEMA on 28 April 2017.	On NOPSEMA acceptance of the Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003)
Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003)	This EP Removal of equipment as outlined in Section 3.6 and field management activities, including environmental monitoring for all decommissioning activities as outlined in Section 3.8.2 .	From EP acceptance, covering equipment removal activities in 2023/2024 and on-going field management.	The EP will end when Woodside notify NOPSEMA that petroleum activity has ended, and all of the obligations under the EP have been completed, and NOPSEMA has accepted the notification, in accordance with Regulation 25A of the Environment Regulations.
Stybarrow Plug and Abandonment EP (BHPB-00SC-N000-0005)	Details permanent plugging and abandonment of the wells in the Stybarrow field.	On notification to NOPSEMA for commencement of activities relating to the plug and abandonment activities.	The EP will end when Woodside notify NOPSEMA that petroleum activity has ended, and all of the obligations under the EP have been completed, and NOPSEMA has accepted the notification, in accordance with Regulation 25A of the Environment Regulations.
Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007)	Details an abandonment <i>in situ</i> deviation case for suction piles, DTM anchors and one wellhead.	From acceptance of EP, covering abandonment <i>in situ</i> of infrastructure (no activities required)	The EP will end when Woodside notify NOPSEMA that petroleum activity has ended, and all of the obligations under the EP have been completed, and NOPSEMA has accepted the notification, in accordance with Regulation 25A of the Environment Regulations.

The Stybarrow Decommissioning and Field Management EP (BHPB-00SC-N000-0003) is the overarching permissioning document under which the decommissioning requirements of General Direction 833 are captured. It is anticipated to remain in force until such time that all activities are completed and the Petroleum Title can be surrendered. Until decommissioning, field management (**Section 3.8**) will ensure remaining subsea infrastructure is maintained in a condition that does not reduce the practicability of full removal. This will ensure Woodside complies with obligations under the OPGGS Act, including:

- section 572(2), to *'maintain in good condition and repair all structures that are, and all equipment and other property that is, in the title area and used in connection with the operations'*
- section 572(3), to *'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'* (unless otherwise approved by NOPSEMA).

3.5.1 Studies to Inform Decommissioning

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. There were regular depth soundings of the DTM between cessation of production and the DTM losing buoyancy to confirm the position of the DTM in the water column. The inspection history of the subsea equipment over field life is summarised in **Table 3-4**.

Table 3-4: Inspection history of subsea equipment in the Stybarrow field

Date	Inspection / Survey Description
August 2009	ROV GVI and 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
Nov 2014	ROV inspection of mooring legs and installing clamp on EH-1 riser
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
Nov 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
July 2023	Anchor and chain burial survey, GVI of infrastructure including structures, flowlines and umbilicals, LIDAR and measurement of DTM on seabed

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 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 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 summarising the inspections, and status, of the equipment in WA-32-L.

- Stybarrow Abandonment Project – Radiological Assessment (BHPB-00SC-R000-0006) (2018): 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.

3.5.1.1 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, 2018b), 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, 2018b).

Based on the radiation survey and testing of recovered flowlines and risers, SA Radiation (2018a, 2018b) concluded that it is likely that most of the Stybarrow equipment does not contain NORM and that there will be no radiological impact to biota populations from the recovery or abandonment of Stybarrow infrastructure. Dose rates to all organisms are well below the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) threshold for population effects (400 uGy/h) and within the lowest International Commission on Radiological Protection (ICRP) Derived Consideration Reference Level (DCRL) band range for potential impacts to individual marine reference organisms (40 – 400 uGy/h).

Woodside will remove subsea equipment exposed to production fluids (and hence all equipment that may potentially contain NORM), which will recover equipment that may contain traces of NORM.

3.5.1.2 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.

3.5.1.3 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 push corer 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 4**).

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 credible explanation for the increased concentrations of these parameters.

3.5.1.4 Engineering Studies

Extensive engineering work has been undertaken to determine the removal methodology, with detailed engineering work continuing to be done. Of particular relevance is the removal methodology for the DTM, which is the most complex piece of equipment in the Stybarrow field requiring removal. Refer to **Section 3.7.2** for details on DTM removal. Removal of other equipment including flowlines, risers, umbilicals and structures is being informed by detailed engineering undertaken by Woodside's removal contractor.

3.6 Stybarrow Subsea Infrastructure Overview

All subsea infrastructure within the Stybarrow field is presented within **Table 3-5**, along with the status and condition and decommissioning schedule. The layout of the field infrastructure is presented in **Figure 3-3**.

Details on the recovery methods for the subsea infrastructure are presented in **Section 3.7**. Subsea equipment is mostly unburied as the seabed is not mobile due to the water depth and relatively weak near-seabed currents. This is evidenced by the 2018 survey observing negligible current effects over the production life, with minor seabed scars from flowline installation operations still visible.

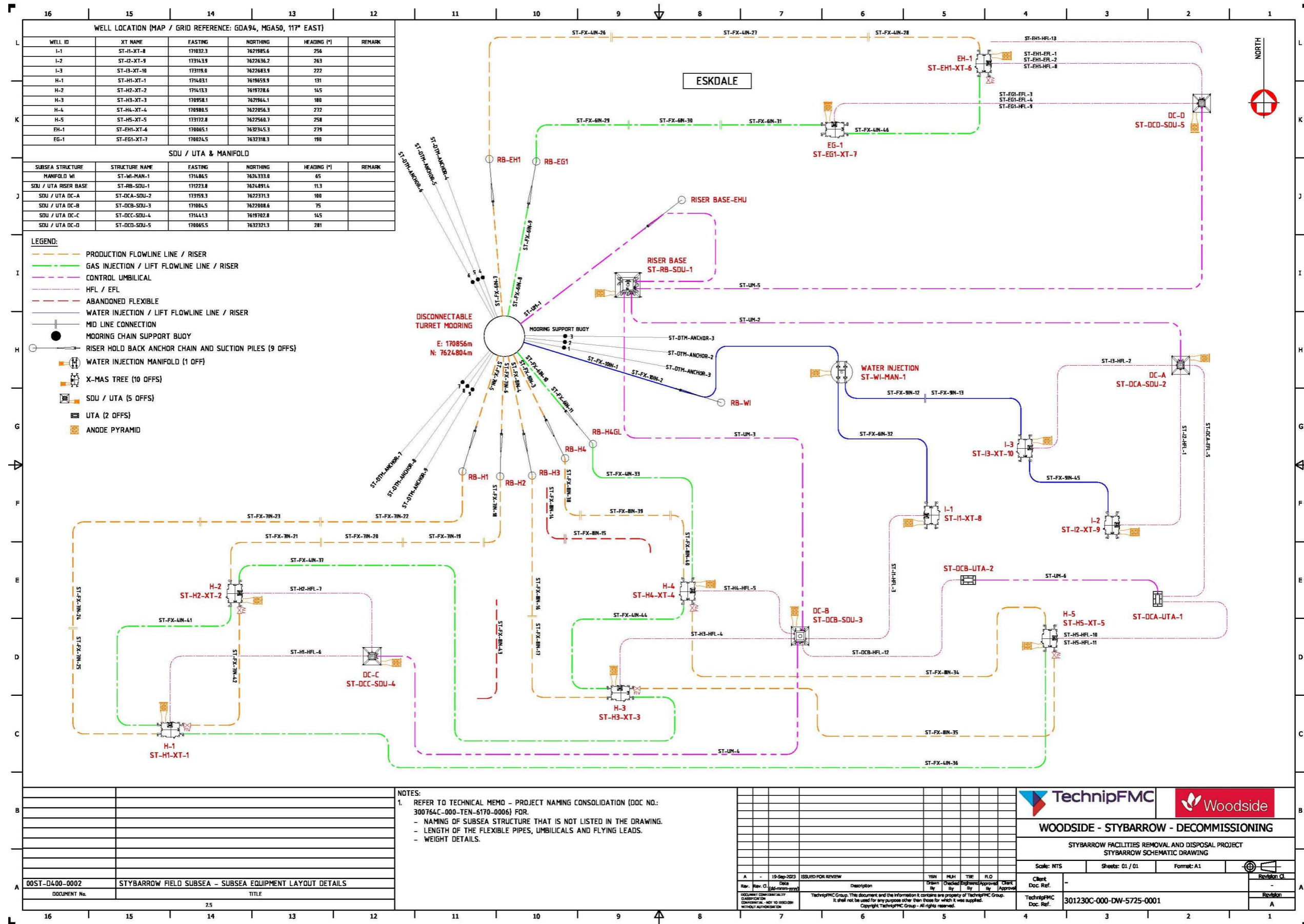


Figure 3-3: Stybarrow field layout

Table 3-5: Subsea equipment inventory in the Stybarrow field

Subsea Infrastructure	Quantity / Length	Size	Approximate Weight	Materials	Status and Condition	Removed under this EP?	Subject to Future EP?
DTM, Mooring Legs and Anchors (Section 3.6.1)							
DTM	1	14.685 m height, 14 m diameter	739.24 t	100% metal (steel)	DTM buoy hull compromised. Lost buoyancy, resting on seabed in stable position. Based on ROV inspections conducted in 2016 and 2018, the DTM has sustained crush damage, but the integrity of the structure remains intact, with no evidence of corrosion observed. Anodes were observed to have less than 20% wastage in the 2016 inspection.	Yes	No
DTM mooring legs – chain and wire	9	1,615 m long	1,341 t	>99% metal (steel) and <1% plastic	On seabed, some plastic sheathing. Based on ROV inspection, there are no identified integrity issues that preclude their removal from the field. They are of robust design, no longer under any load and within design life.	Partially – cut as close as practicable to the anchors, with remaining chain attached to the anchor left <i>in situ</i> . Plastic sheathing to be completely recovered.	Yes – residual chain between anchors and seabed proposed to be abandoned <i>in situ</i> .
DTM mooring anchors	9	Approx. 11 tonnes each. Approx. 6 m long, 6 m wide and 3 m high.	99 t	100% metal (steel)	Embedded in seabed. No parts exposed	No	Yes – anchors proposed to be abandoned <i>in situ</i>
Mooring support buoys	9	3.0 m diameter, 5.34 m height	180 t	100% metal (steel)	Sunken and imploded, sitting on seabed, some in multiple parts. No evidence of corrosion observed in 2016 inspection.	Yes	No
Flexible Flowlines, Risers and Umbilicals (Section 3.6.2)							
Riser buoyancy elements	345	1.5 m diameter, 1.7 height	N/A	N/A	Previously removed.	No – previously removed	No
Flexible risers	9 risers, 12,364 m (all combined)	Production Risers <ul style="list-style-type: none"> ▪ 1 x 6-inch ▪ 2 x 7-inch Gas Lift/Injection Risers <ul style="list-style-type: none"> ▪ 2 x 8-inch ▪ 2 x 6-inch Water Injection Riser <ul style="list-style-type: none"> ▪ 1 x 10-inch Dynamic umbilical riser 1 x 157 mm	1,566 t	Approx. 74% metal (steel) and 26% plastics	Flushed, filled with raw seawater, connected to DTM and riser base. NORM has not been detected in the flexible risers. Oil in water content was flushed to below 30 ppm following cessation. Risers are tangled adjacent to the DTM buoy, but in good condition, with minimal degradation to the outer sheath.	Yes	No
Riser base anchors (suction piles)	9	4 m diameter, 7 m height	1,863 t	100% metal (steel)	Suction piles embedded in seabed.	Partially – clamps and chains removed	Yes – suction piles proposed to be abandoned <i>in situ</i>

Subsea Infrastructure	Quantity / Length	Size	Approximate Weight	Materials	Status and Condition	Removed under this EP?	Subject to Future EP?
Flexible production flowlines	8 flowlines, 25,882 m (all combined)	1 x 4-inch 2 x 7-inch 5 x 8-inch	3,495 t	Approx. 72% metal (steel) and 28% plastics	Flushed, filled with raw seawater, disconnected from trees, and capped. Low concentrations of NORM detected within some sections (two sections of flowline were cut at the EH-1 riser and H4 production flowline). Oil in water content was flushed to below 30 ppm following cessation. The flexible flowlines were sampled during buoyancy removal campaign in 2017. Samples from the flexible production flowlines were taken and the longitudinal strength wires were destructively tested with no loss of strength identified over the design/manufactured values. The condition of the outer sheaths of the flexibles shows minimal degradation also.	Yes	No
					H4 flexible flowline: During production operations in 2010, a sand screen failure resulted in the blockage of the H4 flexible flowline with a sand/hydrocarbon/hydrate plug. Efforts to remove the blockage were unsuccessful and the flowline was disconnected, plugged at the riser end, and fitted with an end-termination fitting at the well end and wet-parked <i>in situ</i> .	Yes	No
Gas injection / lift flowlines	4 injection / lift lines, 16,293 m (all combined)	3 x 4-inch 1 x 6-inch	975 t	Approx. 72% metal (steel) and 28% plastics	Flushed, filled with seawater, disconnected from trees, cap installed in 6" flowline, no caps installed for 4" gas injection / lift flowlines. In good condition, with minimal to no degradation to the outer sheath.	Yes	No
Water injection flowlines	2 injection flowlines, 5,198 m (all combined)	1 x 9-inch 1 x 6-inch	528 t	Approx. 72% metal (steel) and 28% plastics	Flushed, filled with seawater, disconnected, no caps installed – flowline ends forced into the mud to seal. In good condition, with minimal to no degradation to the outer sheath.	Yes	No
Umbilicals	5 umbilicals, 19,100 m (all combined)	Various	258 t	Approx. 63% metal (steel) and 37% plastics	On seabed, connected to trees, with residual fluids: <ul style="list-style-type: none"> Hydraulic fluid (approx. 24.77 m³) Methanol (approx. 13.82 m³) Scale inhibitor and ethylene glycol (approx. 2.86 m³) Demulsifier and ethylene glycol (approx. 5.94 m³) In good condition with no visible degradation	Yes	No
Wellheads, Xmas Trees and Jumpers (Section 3.6.3)							
Wells (Xmas trees and wellheads)	6 production wells 3 water injection wells 1 gas lift / injection well	Wellheads and trees extending up to approximately 3 m above the mudline	643.4 t (Xmas trees) 82 t (7.5 t each wellheads)	>99% metal (steel)	Each well was flushed with treated water and bull-headed with treated water to below the sub-surface safety valve before all valves on the tree were closed. The contents of the wells will be displaced during plug and abandonment activities described in the Stybarrow Plug and Abandonment EP (BHPB-00SC-N000-0005). Plugs were installed where flowlines were disconnected. The wellheads and trees were last visually inspected in 2018 and found to be in excellent condition with no anomalies such as coating damage, bubbles, corrosion, scour, wear, and abrasion, with no marine growth coverage	Yes – Xmas trees and wellheads removed by a vessel will be subject to this EP.	Yes – plug and abandonment is subject to a future EP. If MODU is used to remove any Xmas trees and wellheads, this will also be covered under the plug and abandonment EP.
Jumpers	19 jumpers, 1,276 m	Various	60.5 t	Approx. 63% metal (steel) and 37% plastics	Hydraulic jumpers may be filled with either hydraulic fluid or seawater.	Yes	No
Miscellaneous Subsea Equipment (Section 3.6.4)							
Water injection manifold (suction pile)	1	7.83 m x 6.42 m	44.55 t	>99% metal (steel)	Suction pile foundation embedded 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.	Partially – manifold removed	Yes – piled foundation abandoned <i>in situ</i>

Subsea Infrastructure	Quantity / Length	Size	Approximate Weight	Materials	Status and Condition	Removed under this EP?	Subject to Future EP?
Subsea distribution units (SDU) Umbilical termination assemblies (UTAs)	5 x SDUs 2 x UTAs	2.5 m x 2.5 m x 2.5 m	90.77 t	>99% metal (steel)	SDUs and UTAs resting on mud mats. SDUs, UTAs and mud mats to all be removed. Integrity of all of the structures is supported by robust design and materials of construction, and visual inspection in 2018 confirmed no external corrosion, coating damage or marine growth.	Yes	No
Anode skids	15	4 m x 4 m x 2 m, an open pyramid structure comprising 8 sacrificial anodes made of zinc / aluminium	10.5 t	>99% metal	On seabed. 2018 ROV survey shows minimal wastage of anodes	Yes	No

3.6.1 Disconnectable Turret Mooring (DTM) Buoy, Mooring Legs and Anchors

The DTM buoy provided the connection point between the FPSO and the subsea hydrocarbon gathering systems during the production phase of the Stybarrow field. The DTM buoy was held in place by a series of nine anchors with associated chains. The risers are also attached to the DTM buoy. A structural plan drawing of the DTM is provided in **Figure 3-4**.

The DTM buoy was submerged after the FPSO left the Stybarrow field in accordance with its design. The DTM buoy has no inventory of batteries or cables as it does not have navigation aids (e.g., lights) due to its submerged nature. Tanks within the DTM buoy contained biocide.

The DTM buoy lost buoyancy sometime between May 2016 and October 2016 and is resting on the seabed. The DTM buoy has sustained damage from the water pressure. The tanks with biocide are likely to have fully collapsed during sinking, releasing the biocide to the environment. Any residual biocide will have been consumed given the length of time since initial dosing. Whilst damaged, the structure has been assessed to have retained its structural strength, showed minimal signs of corrosion, and is recoverable based on the most recent surveys undertaken of the structure (**Figure 3-4**). The risers have remained attached to the DTM buoy and will be cut to allow for the recovery of the DTM buoy. The DTM buoy is partially embedded in the seabed with most of the DTM buoy exposed above the mudline (**Figure 3-5**), including the riser entry points into the DTM buoy (**Figure 3-6**). The DTM buoy position and depth is provided in **Table 3-6**.

The nine DTM mooring legs are also lying on the seabed. The mooring leg components (anchors, wires, chains) are intact except for the mooring support buoys, which have imploded. The condition, positions, and depths of the DTM mooring leg components and the support buoys are provided in **Table 3-5**.

The DTM buoy, mooring leg components (except anchors and residual chains) and mooring support buoys will be removed under this EP for disposal onshore. The steel mooring anchors are embedment-style anchors and are securely lodged in the seabed. Removing the anchors is expected to result in substantial seabed disturbance, hence Woodside is considering abandonment *in situ* as an alternative to complete removal. Acceptance of abandonment *in situ* of the anchors will be subject to a Stybarrow End State Decommissioning EP to be submitted to NOPSEMA (refer to **Section 3.5**).

The DTM is almost entirely steel, while the risers are predominantly steel (approximately 70% by weight) and plastic (approximately 30% by weight). The mooring leg components are almost entirely steel. The embedment-type anchors, which are securely embedded in the seabed, are made of steel with a paint coating.

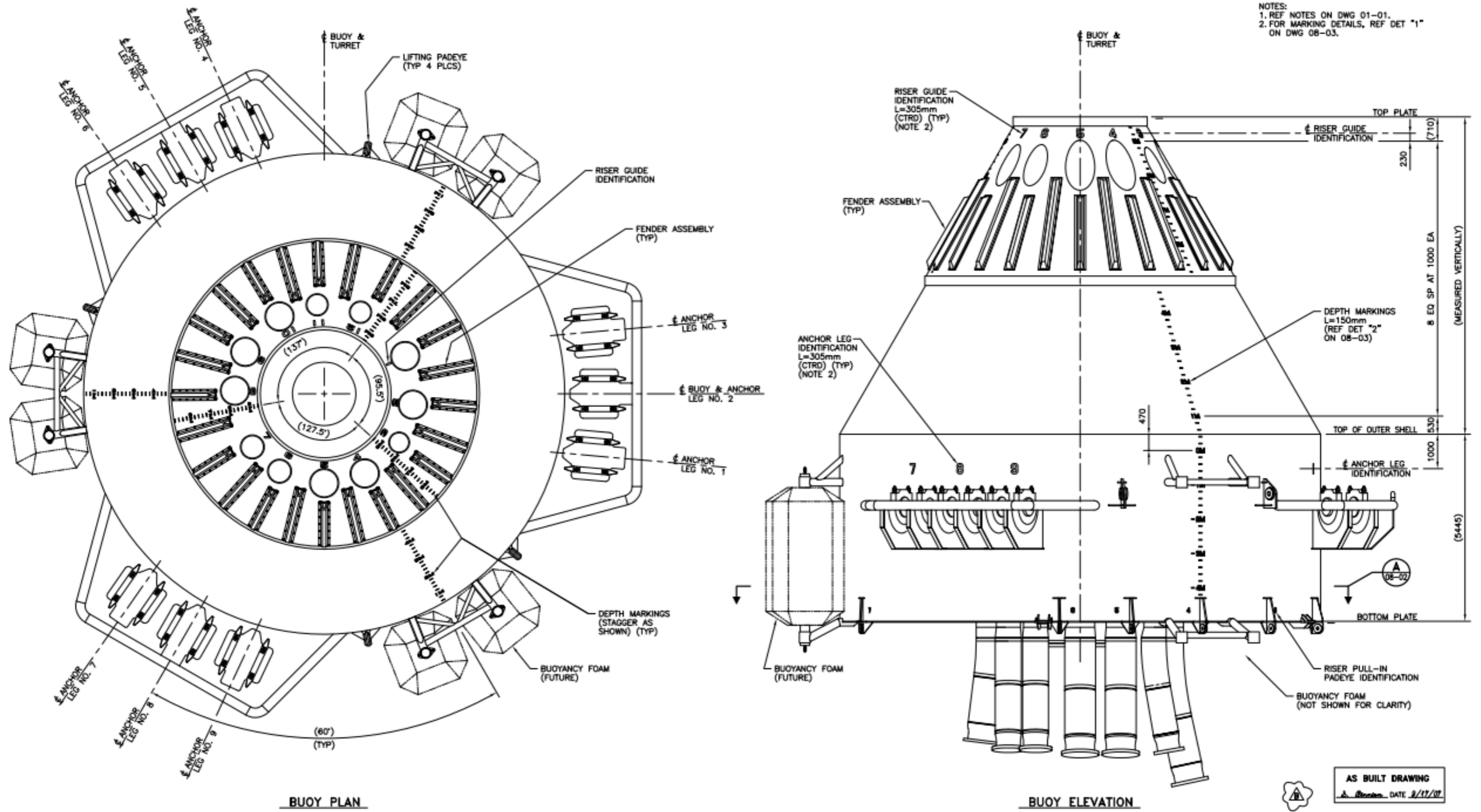


Figure 3-4: Structural plan and elevation drawings of DTM buoy

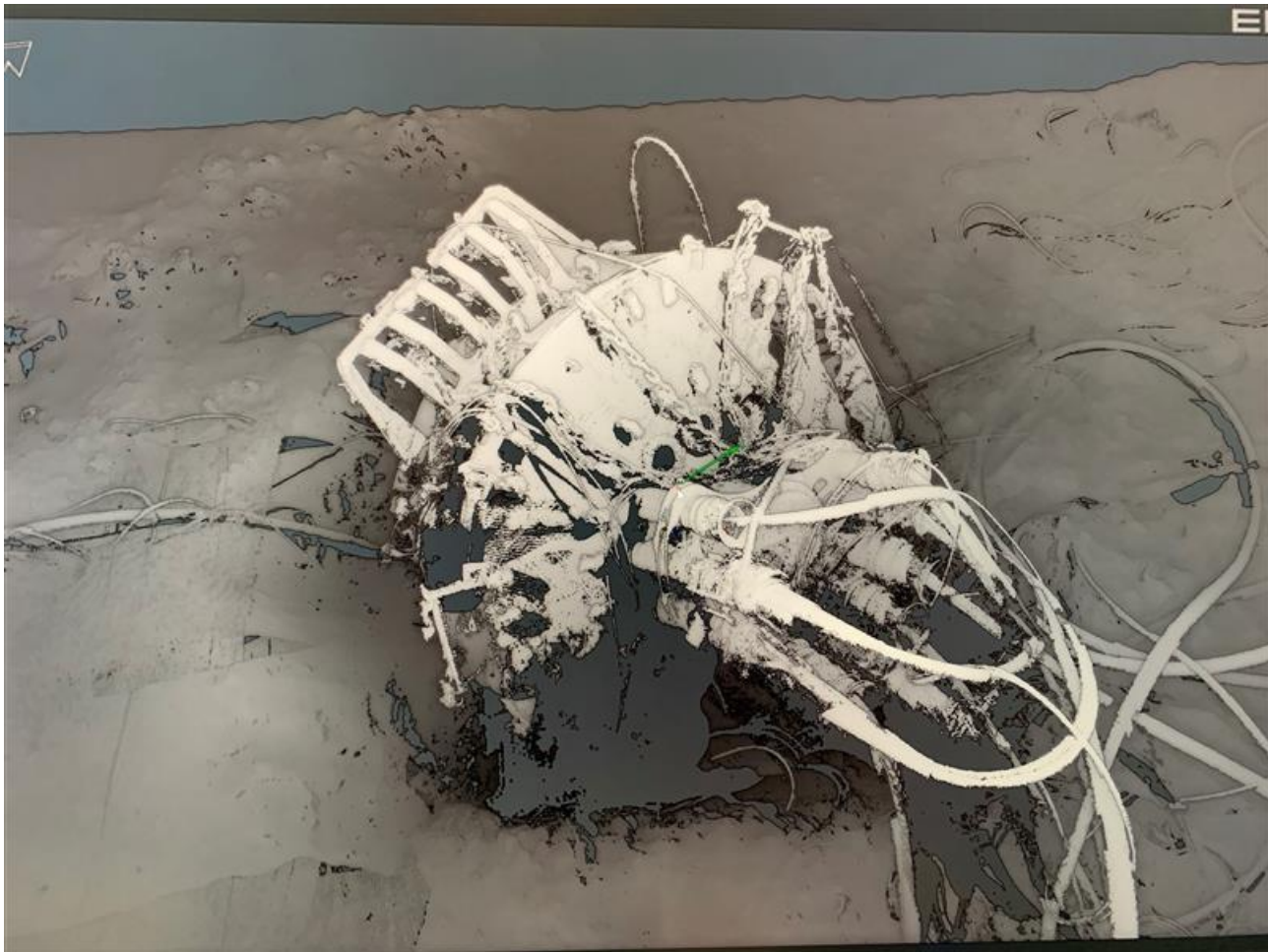


Figure 3-5: Sonar image of DTM buoy on the seabed, showing buoy position and tangled risers taken in July 2023



Figure 3-6: Image from ROV inspection footage showing riser entry to the base of the DTM buoy on the seabed

Table 3-6: DTM position and depth (eastings and northings in MGA50/GDA94)

Component	Easting (m)	Northing (m)	Depth (m)
DTM Buoy	170873.2	7624770.8	813

Table 3-7: DTM mooring leg component positions and depths (eastings and northings in MGA50/GDA94)

Mooring Leg Components	Easting (m)	Northing (m)	Depth (m)
Mooring 1 Anchor	172172.4	7624323.5	807.3
Mooring 1 Chain / Wire	171739.4	7624481.2	816.6
Mooring 2 Anchor	172215.2	7624441.7	807.5
Mooring 2 Chain / Wire	171779.8	7624557.8	816.0
Mooring 3 Anchor	172237.1	7624561.1	807.6
Mooring 3 Chain / Wire	171793.5	7624638.1	815.6
Mooring 4 Anchor	170594.8	7626195.0	826.1
Mooring 4 Chain / Wire	170680.7	7625739.9	826.5
Mooring 5 Anchor	170489.2	7626161.1	829.1
Mooring 5 Chain / Wire	170606.1	7625726.6	823.3
Mooring 6 Anchor	170372.9	7626127.5	828.7
Mooring 6 Chain / Wire	170526.1	7625700.7	832.1
Mooring 7 Anchor	169759.4	7623909.3	842.4
Mooring 7 Chain / Wire	170111.8	7624195.8	837.1
Mooring 8 Anchor	169828.7	7623775.8	842.7
Mooring 8 Chain / Wire	170184.5	7624130.7	836.6
Mooring 9 Anchor	169943.1	7623715.9	842.0
Mooring 9 Chain / Wire	170238.7	7624063.3	837.4

Table 3-8: Mooring support buoy positions and depths (includes debris) (eastings and northings in MGA50/GDA94)

Mooring Support Buoys	Easting (m)	Northing (m)
Mooring Support Buoy 1	170952	7624755
Mooring Support Buoy 2	170940	7624755
Mooring Support Buoy 3	170961	7624767
Mooring Support Buoy 4	170859	7624839
Mooring Support Buoy 5	170865	7624847

Mooring Support Buoys	Easting (m)	Northing (m)
Mooring Support Buoy 6	170850	7624819
Mooring Support Buoy 7	170818	7624672
Mooring Support Buoy 8A	170842	7624732
Mooring Support Buoy 8B	170816	7624732
Mooring Support Buoy 9	170852	7624760

3.6.2 Flexible Flowlines, Risers, and Umbilicals

Production, gas injection / lift and water injection flowlines within WA-32-L are listed in **Table 3-9**, **Table 3-10** and **Table 3-11** respectively. These flowlines were flushed with seawater during cessation of production and are lying on the seabed (**Figure 3-7**), except for the blocked H4 flowline (which is capped and filled with sand, produced water, oil and methane hydrates). Following flushing:

- All production flowlines (excluding blocked H4 flowline) were disconnected from trees and caps were installed
- All 4” gas lift flowlines and jumpers were disconnected from trees and left uncapped
- The 6” gas injection flowline was disconnected from the Eskdale-3 (EG-1) tree and a cap was installed
- All water injection flowlines were disconnected from trees and left uncapped, with the ends pushed into the mud to provide an environmental seal.

Caps were installed on the trees where flowlines were disconnected. Flexible flowlines remain connected to the riser bases / water injection manifold. Additional details on the blocked H4 flowline are provided below in **Section 3.7.3**. The total length of flowlines in WA-32-L is approximately 47 km. All production, gas injection / lift and water injection flowlines will be recovered within the scope of this EP for disposal onshore.

A series of nine risers connect the production, gas injection / lift and water injection flowlines and umbilical to the DTM buoy. Riser lengths and diameters are provided in **Table 3-12**. The total length of risers in WA-32-L is approximately 12 km. A series of nine steel riser bases (suction piles) are installed in the seabed, to which the risers are attached by holdback clamps. The positions of the riser bases are shown in **Table 3-13**. All risers and holdback clamps will be removed within the scope of this EP. The riser bases are suction piles that are securely lodged in the seabed. Removing the riser bases is expected to result in substantial seabed disturbance, hence Woodside is considering abandonment *in situ* as an alternative to complete removal for the riser bases. Acceptance of abandonment *in situ* of the riser bases will be subject to an “end state” EP to be submitted to NOPSEMA (refer to **Section 3.5**).

All risers and flowlines were flushed with raw seawater until oil in water concentrations were < 30 ppm during production cessation using a Hach spectrophotometer.

There are a series of umbilicals within WA-32-L (see **Figure 3-9** for an example), which are listed in **Table 3-14**. All umbilicals will be recovered within the scope of this EP and disposed of onshore. The contents of the umbilicals are summarised in **Table 3-15**.

Some of the methanol cores within the umbilicals were flushed with seawater during production cessation. Each of the umbilical chemicals were selected in accordance with the chemical selection process that applied at the time. None of the chemical cores were able to be flushed as they were blocked.

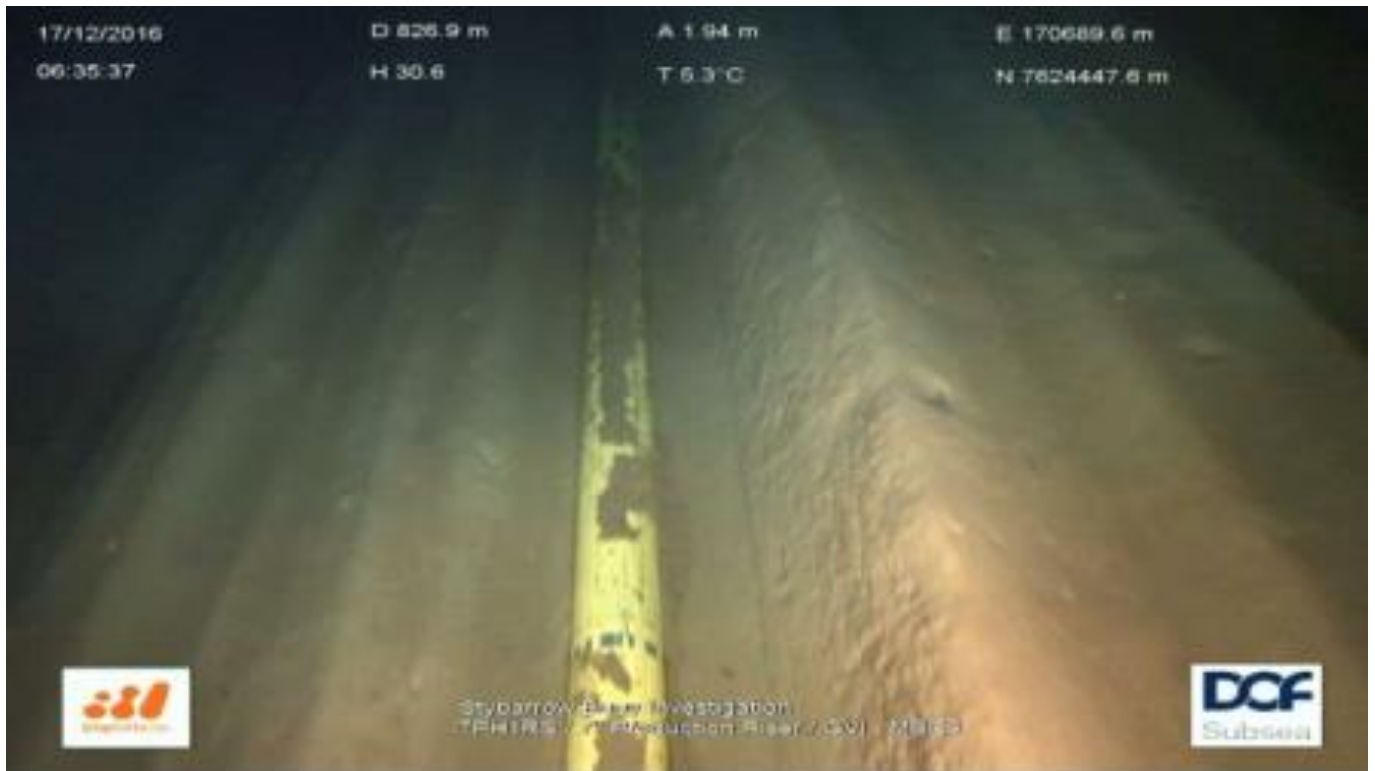


Figure 3-7: Indicative flowline on seabed



Figure 3-8: Tangled risers on seabed near the DTM buoy



Figure 3-9: Indicative umbilical on seabed

Table 3-9: Production flowline lengths and diameters

Production Flowlines	Inner Diameter (mm)	Outer Diameter (mm)	Length (m)
H1 Production Riser Base to Sty-8 (H1) 7" Flexible Flowline	177.8	343.4	4,723
H2 Production Riser base to Sty-7 (H2) 7" Flexible Flowline	177.8	328.7	4,635
H3 Production Riser Base to Sty-10 (H3) 8" Flexible Flowline	203.2	361.1	2,193
H4 Production Riser Base to Sty-11 (H4) 8" Flexible Flowline	203.2	361.1	2,193
Sty-10 (H3) to Sty-12 (H5) 8" Flexible Flowline	203.2	396.2	2,480
Sty-11 (H4) to Sty-12 (H5) 8" Flexible Flowline	203.2	396.2	2,453
EH1 Production Riser Base to Esk-3 (EH1) 6" Flexible Flowline	101.6	232.8	7,205
Total			23,698

Table 3-10: Gas injection / lift flowline lengths and diameters

Gas Injection / Lift Flowlines	Inner Diameter (mm)	Outer Diameter (mm)	Length (m)
H4GL Gas Lift Riser Base to Sty-11 (H-4) 4" Flexible Flowline	101.6	154.1	2,241
Sty-10 (H3) to Sty-7 (H2) 4" Flexible Flowline	101.6	154.1	2,510
Sty-8 (H1) to Sty-12 (H5) 4" Flexible Flowline	101.6	163.8	4,284
EG1 Gas Injection Riser Base to Esk-4 (EG1) 6" Flexible Flowline	152.4	214.3	7258
Total			16,293

Table 3-11: Water injection flowline lengths and diameters

Water Injection Flowlines	Inner Diameter (mm)	Outer Diameter (mm)	Length (m)
WI Manifold to Sty-5 (I-3) 9" WI Flexible Flowline	228.6	321.8	2,521
WI Manifold to Sty-9 (I-1) 6" WI Flexible Flowline	152.4	215.5	2,677
Total			5,198

Table 3-12: Riser lengths and diameters

Risers	Inner Diameter (mm)	Outer Diameter (mm)	Length (m)
Dynamic Umbilical Riser	N/A	157.5	1,629
Water Injection 10" Riser	254	383.6 (top 60 m) 354.6 (lower section)	1,390
H4GL Gas Lift 6" Riser	152.4	251.5 (top 60 m) 224.5 (lower section)	1,315
EG1 Gas Injection 6" Riser	152.4	251.5 (top 60 m) 224.5 (lower section)	1,315
H4 Production 8" Riser	203.2	359.7	1,345
H3 Production 8" Riser	203.2	359.7	1,345
H2 Production 7" Riser	177.8	328.7	1,350
H1 Production 7" Riser	177.8	328.7	1,350
EH1 Production 6" Riser	152.4	287.3	1,325
Total			12,364

Table 3-13: Riser base 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

Table 3-14: Umbilical lengths

Umbilicals	Length (m)
Riser Base SDU / UTA to DC-A SDU / UTA	3,150
Riser Base SDU / UTA to DC-B SDU / UTA	3,000
Riser Base SDU / UTA to DC-D SDU / UTA	8,100
DC-B SDU / UTA to DC-C SDU / UTA	2,450
DC-B UTA to Sty-12 (H-5) UTA	2,400
Total	19,100

Table 3-15: Summary of chemical umbilical contents

Product	Description	Cumulative Volume (m ³)
Hydraulic fluid (Oceanic HW 443)	Water-based hydraulic fluid. Commonly used in open subsea hydraulic systems. Registered as non-CHARMable under OCNS, with an OCNS Group C rating under the Netherlands (NL) PROTOCOL - Standard Operating Procedure for Offshore Chemical Hazard Assessment Part 1: Core Elements (Blake et al., 2022).	24.77
Methanol	Methanol (or methyl alcohol) is routinely used for hydrate inhibition. Methanol is listed by the OSPAR Commission as a substance that poses little or no risk to the environment (PLONOR).	13.82
Scale inhibitor (Nalco EC6330A)	Scale inhibitor containing ethylene glycol and trisodium phosphate. Sodium phosphates and monoethylene glycol are listed by the OSPAR Commission as a PLONOR substance.	2.86
Demulsifier (Brexit EC6330A)	Naphtha-based emulsion breaker. Not rated under OCNS or by OPSAR Commission as it no longer manufactured, however was previously listed as OCNS Gold with no substitution warning.	5.94

3.6.2.1 H4 Flowline

In August 2010 the Stybarrow H4 well experienced a sand screen failure resulting in large quantities of sand flowing through the H4 flowline and riser and into the production separator onboard the FPSO. Eventually well production ceased due to the high sand level in the separator. At that stage the sand in the H4 flowline and riser settled out resulting in a blockage in the subsea system. Densitometry scans were completed in 2011 and confirmed that the blockage was in the static portion of the flowline. Results of the scans are summarised in **Figure 3-10**. The exact nature of the blockage in the H4 flowline is uncertain; however, it is assumed to be a combination of up to 14m³ of crude oil, sand and hydrate crystals.

The blocked H4 flowline was subsequently disconnected, plugged at the riser end, and fitted with an end-termination fitting at the well end, followed by wet-parking *in situ*.

H4 Riser & Flowline Survey Plots

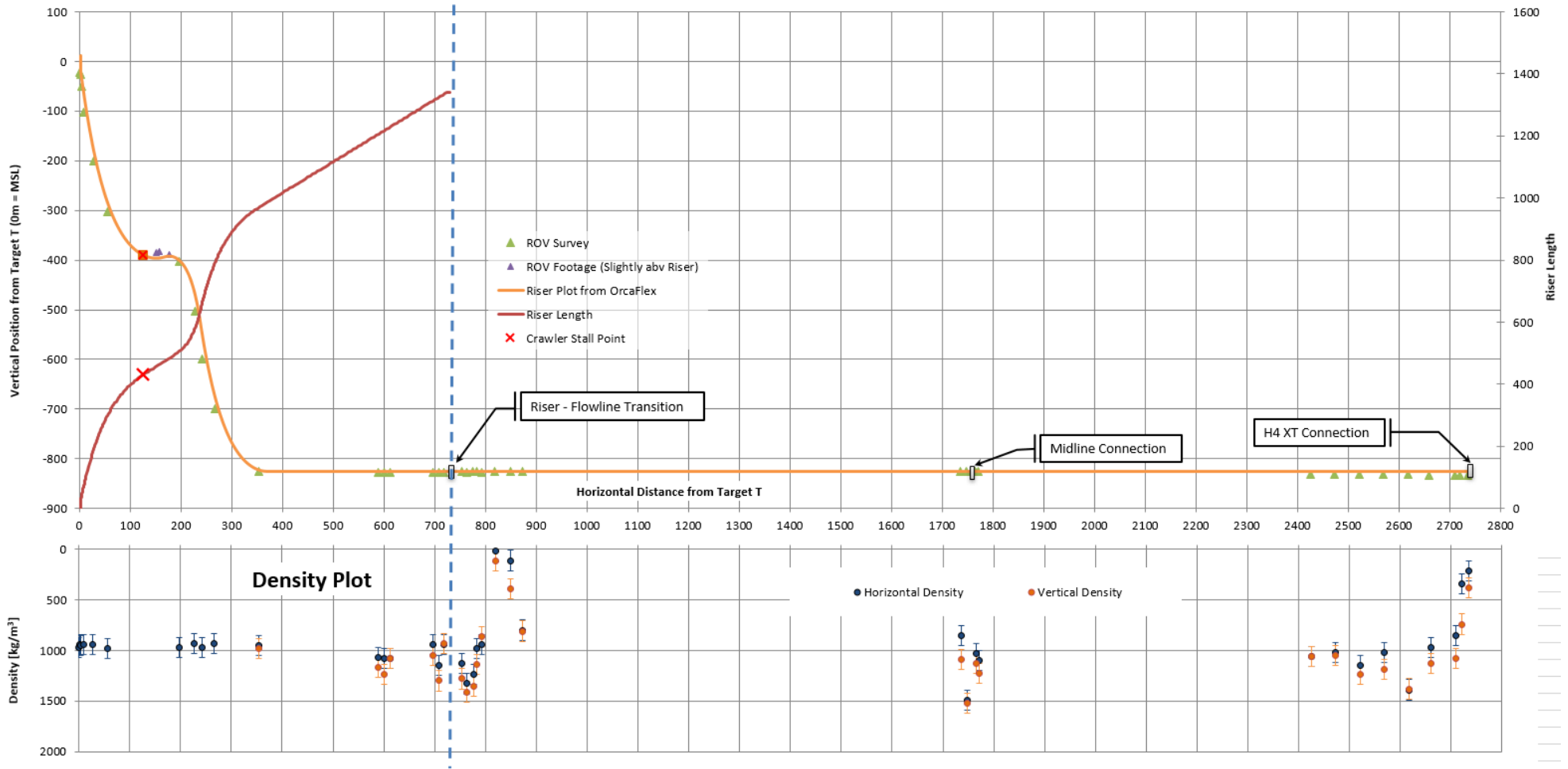


Figure 3-10: H4 flowline and riser densitometry survey plot

A study completed by Atteris (2021) quantitatively estimated the H4 flowline contents based on the production characteristics at the time of shutdown. Three scenarios were presented by Atteris (2021), with estimates of the flowline contents for each scenario provided in **Table 3-16**. Additional densitometry scans to inform further understanding and of the flowline contents are being undertaken in survey activities in Q3 2023.

Table 3-16: Quantitative estimates of H4 flowline contents (from Atteris, 2021)

Sand Scenario	Total Volume (m ³)	Sand (m ³)	Oil (m ³)	Water (m ³)	Hydrate (m ³)	Implied Seawater Ingress (m ³)
Lower sand estimate	71.80	0.57	14.03	51.89	2.01	3.3
Intermediate sand estimate		20	10.2	37.7	1.46	2.4
Upper sand limit estimate		30	8.23	30.5	1.18	1.9

3.6.3 Wells

A series of 10 production, gas injection / lift and water injection wells were drilled in four drill centres in WA-32-L. Each of these wells has a wellhead and horizontal Xmas tree in place. The well positions are provided in **Table 3-18**. All Xmas trees and wellheads will be removed within the scope of this EP. The Xmas trees and wellheads will not be removed until plug and abandonment of each well has been completed. Plug and abandonment activities are beyond the scope of this EP; Woodside has submitted an EP to NOPSEMA for these activities (refer to **Section 3.5**).

In addition to the 10 production, gas injection / lift and water injection wells in **Table 3-5**, General Direction 833 lists several abandoned wells with wellheads in place. Woodside confirms these wells within WA-32-L have been plugged and abandoned and the wellheads removed (**Table 3-17**), with the exception of the Eskdale 1 wellhead which is proposed to be left in-situ in the Stybarrow End State Decommissioning EP (BHPB-00SC-N000-0007) (**Table 3-3**). No further activity is required for these wellheads.

Table 3-17: Wells listed in General Direction 833 as abandoned with wellheads in place

Well Name	Well Status
Stybarrow 1/1CH	Wellhead recovered March 6, 2003
Stybarrow 2	Wellhead recovered June 20, 2003
Stybarrow 3/4	Wellhead recovered June 25, 2004
Knott 1	Wellhead recovered July 9, 2004
Eskdale 1	In place – proposed leave <i>in situ</i> under Stybarrow End State Decommissioning EP.
Eskdale 2/2CH1	Wellhead recovered May 15, 2004
Skiddaw 1/2	Wellhead recovered June 1, 2003

Table 3-18: Well positions (eastings and northings in MGA50/GDA94)

Drill Centre	Well	Easting (m)	Northing (m)
DC-A	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
DC-B	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
DC-C	Stybarrow-7 (H-2) Well	171413.34	7619728.58
	Stybarrow-8 (H-1) Well	171403.11	7619659.88
DC-D	Eskdale-3 (EH1) Well	170065.05	7632345.32
	Eskdale-4 (EG1) Well	170024.53	7632318.26

3.6.4 Miscellaneous Subsea Equipment

In addition to the equipment considered above, a range of ancillary equipment is installed within WA-32-L:

- a single water injection manifold (including a suction pile foundation)
- five subsea distribution units (SDUs)
- two umbilical termination assemblies (UTAs)
- numerous jumpers
- 15 anode skids

All the equipment listed above will be removed within the scope of this EP except for the suction pile foundation. Like the riser bases described in **Section 3.6.2**, removal of the manifold foundation will result in substantial disturbance to the seabed. Woodside is proposing abandonment *in situ* as an alternative to complete removal for the manifold foundation. Acceptance of abandonment *in situ* of the manifold foundation will be subject to the Stybarrow End State Decommissioning EP in assessment NOPSEMA (refer to **Section 3.5**).

The manifold, SDUs and UTAs are listed in **Table 3-19**, along with their positions. Jumpers are listed in **Table 3-20**.

Table 3-19: Manifold, SDU and UTA positions (eastings and northings in MGA50/GDA94)

Equipment	Easting (m)	Northing (m)
Water Injection Manifold	171486.5	7624333.0
Riser Base SDU	171223.8	7624891.4
SDU A	173159.3	7622671.3
SDU B	171004.5	7622008.6
SDU C	171441.3	7619702.8
SDU D	170065.5	7632321.3
DC-A UTA	173183.0	7622582.1
DC-B UTA	171019.6	7621973.9

Table 3-20: Jumper lengths

Jumpers	Length (m)
Sty-5 (I-3) to Sty-6 (I-2) 9" WI Flexible Jumper	57
Sty-5 (I-3) to DC-A SDU / UTA Control	50
Sty-6 (I-2) to DC-A SDU / UTA Control	50
DC-A SDU / UTA to Sty-12 (H-5) UTA EFL	50
Sty-12 (H5) to Sty-12 (H-5) UTA HFL - EFL	50
Sty-9 (I-1) to DC-B SDU / UTA HFL - EFL	50
Sty-10 (H-3) to DC-B SDU / UTA HFL - EFL	64
Sty-11 (H-4) to DC-B SDU / UTA HFL - EFL	65
Sty-10 (H-3) to Sty-11 (H-4) 4" Flexible Gas Lift	140
DC-B SDU / UTA to DC-B UTA HFL - EFL	50 ¹
8" Production Jumper Abandoned	136
Sty-7 (H-2) to Sty-8 (H-1) 4" Flexible Gas Lift	173
Sty-7 (H-2) to Sty-8 (H-1) 7" Flexible Production	81
Sty-7 (H-2) to DC-C SDU / UTA HFL - EFL	43
Sty-8 (H-1) to DC-C SDU / UTA HFL - EFL	64
Esk-3 (EH-1) to Esk-4 (EG-1) 4" Flexible Gas Lift	68
Esk-3 (EH-1) to DC-D SDU / UTA HFL - EFL	45
Esk-3 (EH-1) to DC-D SDU / UTA HFL - EFL Abandoned	45
Esk-4 (EG-1) to DC-D SDU / UTA HFL - EFL	45
Total	1,777

3.7 Infrastructure Removal Activities

3.7.1 Subsea Infrastructure

Table 3-21 summarises the indicative removal methods for each piece of subsea infrastructure, along with any discharges and vessel requirements. Once recovered, subsea infrastructure will be transported to shore for disposal in accordance with applicable legislation.

The methodologies detailed in **Table 3-21** provide an overview of the removal activities for each piece of subsea infrastructure for the purposes of determining potential environmental impacts associated with the activities. The specific removal methods and sequence of activities will be determined by the removal contractor.

Subsea infrastructure may be set down on the seabed in the immediate vicinity of removal, to enable safe rigging before recovery.

ROV surveys of subsea infrastructure will be conducted prior to, and at the conclusion of, infrastructure removal activities.

Table 3-21: Indicative subsea equipment removal methods

Equipment	Primary Removal Method	Discharges during Removal
DTM buoy	Refer to Section 3.7.2.	All risers have previously been flushed with raw seawater, negligible volumes of residual hydrocarbons Voids in DTM buoy contained treated seawater, will be degraded by now
DTM mooring legs – chain and wire	<ul style="list-style-type: none"> ▪ Cut chain/wires as close to DTM buoy as practicable ▪ Cut chain as close to anchors as practicable ▪ Anchors and residual chain to remain in place 	No discharges
Mooring support buoys	<ul style="list-style-type: none"> ▪ Connect grapple or rigging to buoy pieces. ▪ Recover directly to deck or via a subsea work basket. Recovery method driven by integrity and size of buoy piece 	No discharges
Flexible risers	<ul style="list-style-type: none"> ▪ Cut and remove riser base clamps ▪ Cut flexibles as close to DTM buoy as possible ▪ Connect to end of flexible via end termination or lifting clamp ▪ Reverse reel flexible via the VLS. Note: riser lengths may also be recovered in smaller pieces utilising shears and a spreader bar as required. ▪ Recover to deck and cut into 40 ft lengths for deck storage 	All risers have previously been flushed with raw seawater to < 30 ppm oil in water, negligible volumes of residual hydrocarbons
Riser base anchors (suction piles)	<ul style="list-style-type: none"> ▪ Cut chain as close to anchors as possible and lift/recover to deck. ▪ Recover chains in bundles or directly over the stern of vessel. ▪ Suction piles/anchor base abandoned <i>in situ</i> (subject to an accepted EP). 	No discharges
Flexible production flowlines (excluding H4 flowline) / jumpers	<ul style="list-style-type: none"> ▪ Connect to end of flexible via end termination or lifting clamp ▪ Reverse reel flexible via the VLS. Note: riser lengths may also be recovered in smaller pieces utilising shears and a spreader bar as required. ▪ Recover to deck and cut into 40 ft lengths for deck storage 	All flowlines have previously been flushed with raw seawater to < 30 ppm oil in water, negligible volumes of residual hydrocarbons

Equipment	Primary Removal Method	Discharges during Removal
Gas injection / lift flowlines / jumpers	<ul style="list-style-type: none"> As per production flowlines 	Raw seawater
Water injection flowlines / jumpers	<ul style="list-style-type: none"> As per production flowlines 	Raw seawater
Flying leads	<ul style="list-style-type: none"> Cut flying leads into manageable sections and place in basket. Recover basket to deck 	Potential hydraulic fluid
Umbilicals	<ul style="list-style-type: none"> Lift SDU/UTAs to deck with umbilicals attached. Lay umbilical on tensioner with SDU attached. Cut off SDUs from umbilical. Recover to deck and cut umbilicals into 40 ft lengths for deck storage 	Potential hydraulic fluid, methanol, scale inhibitor, demulsifier and ethylene glycol (as per Table 3-15)
Water injection manifold (suction anchor)	<ul style="list-style-type: none"> Connect rigging to central lifting mandrel Remove suction pile utilising reverse installation Recover structure to deck with crane 	Raw seawater
Subsea distribution units (SDU) / umbilical termination assemblies (UTAs)	<ul style="list-style-type: none"> Connect rigging to existing padeyes Recover structures and mudmats to deck with crane 	Residual umbilical fluids
Anode skids	<ul style="list-style-type: none"> Connect rigging to central lift point. Recover anodes to deck with crane. 	Not applicable

3.7.2 Disconnectable Turret Mooring Buoy

The DTM buoy is large and its removal is complex compared to other equipment in the Stybarrow field. Concept select engineering was performed which determined the method described below as being reliable and suitable for the complete recovery of the DTM buoy. The method will employ a heavy lift vessel and lifting frame to safely lift the DTM buoy from the seabed. This method will recover the DTM buoy entirely within WA-32-L.

A contract for the DTM recovery works was awarded in May 2023 and subsequently detailed engineering has commenced for each stage of the work to recover the DTM.

The removal method of the DTM comprises:

- 3-dimensional survey performed prior to removal to support detailed engineering
- Where required, localised sediment relocation at specific locations around where the DTM is resting on the seabed to gain access to chains or parts of the DTM for recovery
- DTM will be lifted in two to four stages as follows:
 - Seabed lift, will consist of low-level lift (< 5 m above seabed) of DTM from seabed and transferring to recovery lifting frame which will be specifically design and prior positioned on the seabed next to DTM (**Figure 3-11** and **Figure 3-12**). The ROV will then secure the DTM to the lifting frame.
 - Water column lift, recovery of the lifting frame with DTM using a heavy lift vessel crane or deep-water lifting winch and pennant rigging arrangements to approximately 50 m below the surface (**Figure 3-11**)
 - Load handshake, the lifting frame with DTM will be transferred to the heavy lift vessel crane hook (if using the deep-water lifting winch)
 - Final lift to deck, lifting frame with DTM will be lifted through the splash zone and either onto the heavy lift vessel or a barge.
- DTM lifting frame will be sea-fastened to heavy lift vessel or barge deck ready for transportation for recycling or disposal.
- Post-lift seabed survey to confirm removal of all required items and as-left status of seabed. Any parts of the DTM dislodged during recovery operations will be removed from the seabed.

Woodside will implement controls to facilitate successful recovery of the DTM. The lifting arrangements will be subject to verification and validation during the design phase, including identifying anchor points on the DTM for the lift including redundancy points. Lifting components will be checked prior to use to confirm they meet design requirements. Verification of the DTM buoy lifting arrangement will be performed at key stages during the lift.

Woodside has confidence in the selected DTM recovery concept. Several other DTM recovery concepts were identified and evaluated to have lower probability of success. Brief descriptions of the relative advantages and disadvantages of recovery concepts are provided in **Table 3-22**.

If an anchor point does fail, then the DTM would be lowered to the seabed (it will only be a few meters above the seabed for this operation) and an assessment undertaken to understand the reason for failure then assess an alternate anchor point.

The timing of DTM recovery will be to suit vessel availability and environmental limitations for operations (specifically the lift through the splash zone). DTM recovery windows based on metocean conditions are generally limited to within cyclone season from November through April however vessel availability at contract award has defined a commencement window of January to May 2024, which complies with General Direction 833.

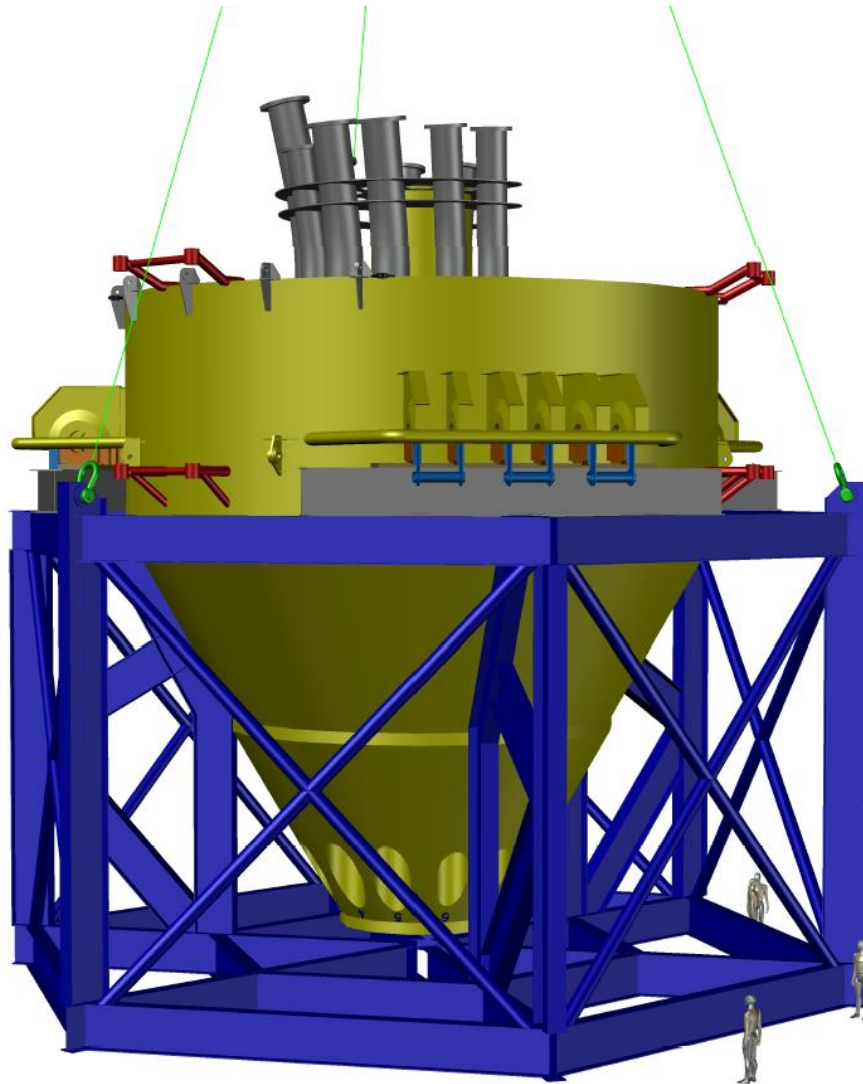


Figure 3-11: Conceptual models of DTM recovery frame

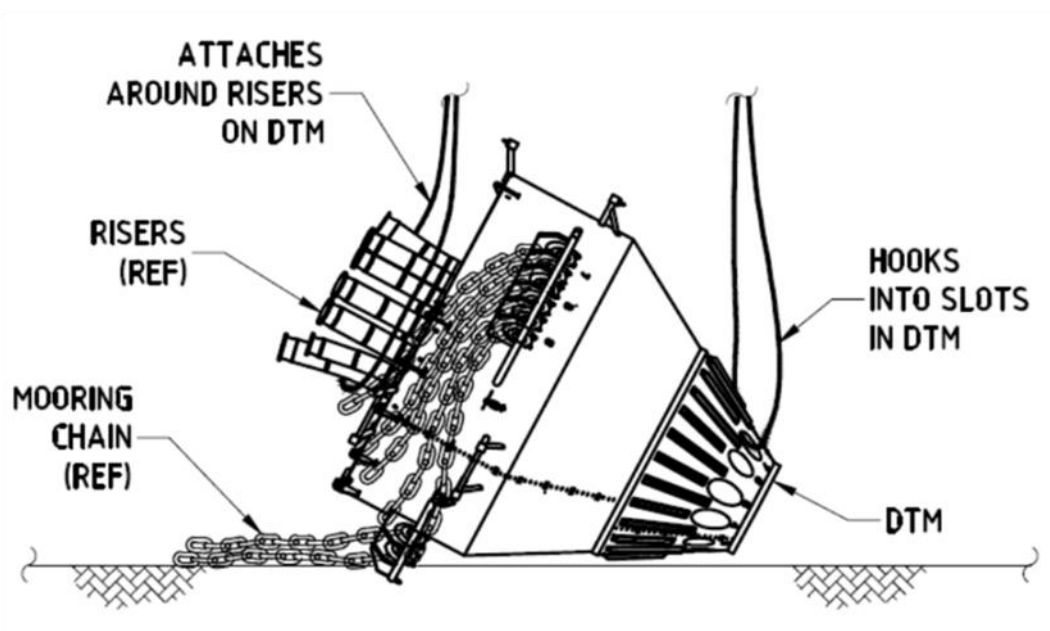


Figure 3-12: Conceptual model of lifting line attachments to DTM buoy

Table 3-22: Qualitative comparison of DTM buoy recovery methods

Method	Description	Advantages	Disadvantages
Single lift in WA-32-L (selected concept)	Lift the DTM buoy using a heavy lift vessel	<ul style="list-style-type: none"> ▪ Method with highest confidence of recovery <ul style="list-style-type: none"> – DTM buoy lifted as a single piece which retains structural integrity ▪ All activities completed in the petroleum title <ul style="list-style-type: none"> – No requirement to tow 	<ul style="list-style-type: none"> ▪ Requires heavy lift vessel, which typically have limited availability. Mitigated, as Woodside has secured a heavy lift vessel to complete the work within the time stipulated by General Direction 833
Section DTM on seabed, multiple lifts	Cut the DTM buoy on the seabed into smaller pieces and recover as a series of relatively small lifts by a construction support vessel	<ul style="list-style-type: none"> ▪ Can be executed by vessels with relatively small crane capacity ▪ Capable vessels likely to have greater availability 	<ul style="list-style-type: none"> ▪ DTM buoy design not amenable to sectioning (complex cutting) ▪ Potential for reduced structural integrity of DTM buoy sections, with higher risk of lost parts during lifting ▪ Greater amount of seabed debris ▪ Extended offshore campaign
Single lift and tow	Lift the DTM buoy to sea surface in a single piece using a construction support vessel to below water level and tow to sheltered waters to undertake recovery to deck.	<ul style="list-style-type: none"> ▪ DTM buoy lifted as a single piece which retains structural integrity 	<ul style="list-style-type: none"> ▪ Crane capacity required generally greater than available large (non-HLV) construction vessels ▪ Capable (non-HLV) vessels unlikely to be available ▪ Introduces risk of loss of DTM buoy during towing

3.7.3 H4 Flowline

As described in **Section 3.6.2.1**, the H4 flowline was blocked during production and a replacement installed. The blocked H4 flowline was capped and left on the seabed. The removal of the blocked H4 flowline presents a particular challenge due to the contents of the flowline. The ambient temperature and pressure conditions and the contents of the H4 flowline are conducive for the formation of gas hydrates. Upon recovery of the flowline in its present state (i.e., blocked and containing gas hydrates) to warmer, shallower waters, the gas hydrates will dissociate and release methane gas. Dissociation of gas hydrates onboard the vessel presents an unacceptable safety risk due to the explosive and asphyxiant nature of methane. Atteris (2020) estimated the pressure generated by gas hydrate dissociation within the blocked H4 flowline may increase up to approximately 846 bar – substantially greater than the H4 flowline design pressure of 240 bar. Uncontrolled hydrate dissociation may result in an explosive release from the H4 flowline, which is an intolerable safety risk.

Woodside has undertaken extensive engineering to determine feasible methods to recover the H4 flowline. Woodside's objectives in relation to H4 flowline removal are to completely remove the H4 flowline while minimising impacts to the environment and risk to personnel. Six options were identified by Woodside in relation to these objectives, which are described in **Table 3-23**. Relative strengths and weaknesses of these six options were compared (**Table 3-24**), with Option 1 – transverse cut and recovery being the preferred option. This option will release the contents of the H4 flowline to the environment at the seabed during cutting and recovery.

Woodside's assessment of the methods to recover the blocked H4 flowline was made in the context of General Direction 833 and other relevant requirements. Abandonment *in situ* was determined to be unacceptable, hence Woodside has focussed on safe and reliable methods to recover the flowline. The selected method – transverse cut and recovery – is the most reliable method to recover the flowline whilst managing the safety risk of gas hydrate dissociation and meeting the requirements of General Direction 833. This method will release the contents of the flowline, resulting in environmental impacts. However, other removal methods considered may also result in the release of the contents of the flowline and present greater technical complexity. Greater technical complexity increases the risk of a method failing to recover the flowline and releasing the contents in an uncontrolled way. The transverse cut and recovery method will release the contents of the blocked H4 flowline in a controlled way, which facilitates recovery of the contents of the flowline where practicable.

Woodside has presented an assessment of the impacts of the transverse cut and recovery method in **Section 7.7**. This includes demonstrations that the environmental impacts and risks will be managed to a level that is acceptable and ALARP. Woodside is not proposing an alternative to the full removal of the blocked H4 flowline. Hence, there is no requirement to demonstrate that the removal method selected results in equal or better environmental outcomes than any alternative removal methods (as is required by the *Guideline: Offshore Petroleum Decommissioning* (Department of Industry, Science, Energy and Resources, 2022) when proposing alternatives to full removal of equipment).

Table 3-23: H4 flowline remediation option descriptions, technical feasibility and health, safety and environment considerations

Option	Description	Technical Feasibility	Health, Safety and Environment Considerations
Option 1 – Transverse Cut and Recovery	<p>The full length of H4 will be cut into manageable sections for recovery whilst in its current position on the seabed. The sections will then be recovered to deck in baskets or individually. The cutting and recovery method utilised will allow for any additional dissociation of hydrates during recovery to surface.</p> <p>Woodside will verify that no hydrate plugs are remaining within the flowline sections prior to recovery through the splash zone.</p>	<p>Multiple subsea flexible cutting solutions are available. Clean cuts can be achieved with diamond wire saws or chop saws as required, whereas shears are also available as a more efficient option.</p> <p>If required, recovery baskets will be procured or fabricated to suit nominated cut lengths.</p>	<p>All cutting operations are to be performed subsea. On recovery to deck, the sections of flowline will be free flooding and the exposed ends will ensure that there is no risk of entrapped pressure from residual dissociation.</p> <p>Cutting the flowline subsea will result in the release of the contents of H4 to the environment. Sections will be flushed subsea prior to recovery to deck to prevent workforce exposure to gas hydrates. Woodside has commissioned hydrocarbon spill modelling of the transverse cut methodology, which is described in Section 7.7.</p>
Option 2 – Longitudinal Cut and Recovery	<p>Option 2 consists of a dedicated cleaning and cutting tool which travels along the flowline, injecting/returning dissociation chemicals, whilst simultaneously cutting the cleaned section of flexible longitudinally. A transverse cutter, installed at the back of the tool, cuts the flexible flowline into sections for recovery to deck via baskets or individually.</p>	<p>This tooling spread was provided as a concept only. No engineering or technical feasibility was completed. The decision was made not to pursue a funded study as there was limited confidence in the ability to maintain the integrity of the flexible flowline throughout the cutting operation. The following additional risks were identified.</p> <ul style="list-style-type: none"> ▪ Ability to disconnect tool from the flowline in case of breakdown or snagging on cut halves. ▪ High consumption of blades due to thick insulation layers and armouring. ▪ Unit burying itself and becoming sanded-up whilst traversing along length of flowline. ▪ Complex tooling and time-extensive methodology incurring schedule risk and overall ability to meet the General Direction 833. 	<p>Engaging the proposed tooling onto the flowline will require clean cutting the end fittings and midline connectors. Each instance that the contents of the flowline is open to the environment will result the release of a small volume of the H4 contaminants.</p> <p>Cutting the flowline longitudinally will generate significant swarf from the thick insulation layers. Furthermore, the integrity of the flexible may become compromised such the layers begin unfurling and become detached from the main carcass.</p> <p>All cutting and decontamination operations are to be performed subsea. On recovery to deck, the sections of flowline will be free flooding and the exposed lengths will ensure that there is no risk of entrapped pressure from any residual dissociation.</p> <p>Due to high quantities of exposed sections and potential unfurling of the flowline, additional care will be required for any handling of flowlines on deck. There will also be the risk of stored energy in the various layers of armour wires.</p>
Option 3 – Establishing Communications Via Hot Taps	<p>Option 3 involves utilising hot tap technology, traditionally applied to rigid pipelines to unblock and re-establish communications throughout the length of H4. The flowline would require separation at the midline connectors, followed by relocation of the midline connection points to the respective riser/XT ends. Intervention caps would then be installed at each open face for chemical injection and pressure monitoring.</p> <p>A hot tap would then be installed ~100 m from one of the connectors. The internal bore will be tapped by first drilling through the insulation layers then punching a hole into the annulus. Communication between the tap and the connector will be verified, if none are established, remediation via draw-down, chemical injection or aggravation will be completed until successful.</p> <p>This hot tap process would be repeated every ~100 m along the lines until communication is verified throughout the entire length. This will also be repeated for the second section of H4.</p> <p>Pigging may be required following hot tap operations to confirm flowline is sufficiently remediated prior to recovery.</p>	<p>Hot tapping for hydrate remediation within flexible flowlines has been completed in the past, however without the presence of a sand blockage and detail on re-establishing a pressure seal. Hence, at present there is a risk that the hot tap location cannot be re-sealed.</p> <p>Delivery of chemicals and path of return lines has not been confirmed (vessel deployed downlines or via ROV/skid).</p> <p>Hydrate remediation via draw-down and chemical intervention is a trialled and tested method. However, there may be significant schedule risk due to time taken to draw down hydrates and flush in smaller sections of flowline.</p> <p>Completing remediation with hot taps allow the flowline to be maintained as a single unit without deconstruction. Hence, recovery may be achieved via reverse reeling.</p>	<p>All remediation operations will be performed subsea. Health and safety challenges arise on receipt of any contaminants on deck or the presence of any residual hydrates within the flowline on recovery. Once communications have been established throughout the flowline, there is still a risk of additional dissociation on recovery to deck. Hence, there is potential for entrapped pressure within the flowline.</p> <p>Removing caps of the flowline end fittings and separating the midline connectors for intervention cap installation will result the release of a small volume of the H4 contaminants into the environment.</p>
Option 4 – Establishing Communications via Rig/Vessel Deployed Coiled Tubing	<p>Option 4.1 – Mobile Offshore Drilling Unit (MODU)</p> <p>This concept considers recovering one end of the H4 flowline, suspending this end from the deck of the MODU, followed by running coiled tubing through the length of the flowline to complete remediation activities.</p>	<p>The concept was disqualified due to the risk of over-pressurisation the flow line. Additionally, the risk of damaging adjacent subsea flowlines / structures and the flow line itself resulting in a loss of containment erode the benefits.</p>	<p>This concept disregards the risk associated with the potential Loss of Position (LoP) associated with DP vessels. In an event of LoP, a DP vessel must be able to disconnect in a timely manner to minimize risk to personnel, the environment, and equipment. There is a health and safety risk to personnel resulting from the parting of the flowline at surface or in the water column. The risk of recoil of the top drive into the derrick resulting in structural damage, potential dropped objects with a potential for multiple fatalities is considered credible. Failure to disconnect may also result in damaging the adjacent subsea flowlines and/or collisions with other installations or vessels in the vicinity should be considered.</p>

Option	Description	Technical Feasibility	Health, Safety and Environment Considerations
	<p>Option 4.2 – Temporary Riser Deployed from MODU This concept is based on the use of an existing 1,100 m long section of flexible flowline (H3) to act as a temporary riser and resolve the risk of flow line over-pressurisation due to hydrate dissociation. The riser will hence enable a surface based coiled tubing spread to be deployed to decontaminate H4 flowline.</p> <p>Option 4.3 – Riserless Coiled Tubing Operation Riserless coiled tubing (RLCT) refers to the use of coiled tubing technology for subsea application without the use of workover riser system.</p>	<p>This concept would require two separate vessel campaigns:</p> <ul style="list-style-type: none"> ▪ Vessel campaign to complete preparation works such as connection of H3 to H4 and reconfiguration of flexibles for MODU interface. ▪ MODU (or a well test vessel) to recover the H3 flowline end to the moonpool, followed by coiled tubing intervention works. <p>RLCT has been used in 2014 and 2015 for subsea coring operations for the Rogfast tunnel and for top-hole drilling for shallow water gas detection. These operations were performed in shallow water and utilized a dual coiled tubing injector configuration, with a standard injector at surface and a subsea injector at the seabed, operating simultaneously to maintain the required tension on the coiled tubing pipe through the water column. For the shallow water seabed coring campaign, a simpler configuration was selected, which operated with only one coiled tubing injector at surface, in a so-called gravity-fed configuration.</p> <p>All the above-mentioned cases of RLCT consists of running coiled tubing into a well through an established subsea infrastructure. Stybarrow H4 flowline comes with the added complexity of being disconnected from the subsea tree and the FPSO as well as laying horizontally.</p> <p>Preliminary scoping of engineering studies to implement RLCT indicated this method could not reliably be implemented in time to comply with General Direction 833.</p> <p>Despite the schedule mis-alignment, coiled tubing drag force and hydraulics model was conducted to define the required flow rate for sand removal and the maximum allowable dogleg to run coiled tubing bottom hole assembly from vertical section (water column) into horizontal section (flow line on seabed).</p>	<p>Like the option 4.1 above, this concept disregards the MODU inability to emergency disconnect in a timely manner.</p> <p>In the case of loss of position of the vessel, 2000 m of coiled tubing could either be paid out or could be cut with a hydraulic cutter as a mean to emergencies disconnect.</p>
<p>Option 5 – Elevation to Shallow Water</p>	<p>Option 5 involves elevating the entire length of H4 using buoyancy/lift bags to an ambient seawater location of slightly less than 16 °C. At this temperature the hydrates dissociate without exceeding the flowline design pressure (240 bar).</p> <p>The flowline would be connected to a high-pressure downline which will return vented fluids and gas back to the vessel until the flowline is sufficiently decontaminated.</p>	<p>There is a significant level of uncertainty and complexity in suspending a 2.2 km length of flexible flowline at a fixed depth using lift bags/buoyancy, particularly when undergoing flushing operations. Furthermore, temperatures above 16 °C have the potential to exceed flowline design pressure limits.</p> <p>Natural dissociation of the hydrates will also be a time-extensive process due to the moderate temperature difference between the external medium and the internal fluids, combined with the flowline's insulation which would result in a very low rate of heat transfer and hydrate melting. This would significantly extend the time that the flowline will be suspended within the water column.</p>	<p>All remediation operations will be performed subsea. Health and safety challenges arise on receipt of any contaminants on deck or the presence of any residual hydrates within the flowline on recovery.</p>
<p>Option 6 – Permanent burial</p>	<p>This method involved permanent burial of the H4 flowline via trenching and backfill. The option was discussed internally and excluded from consideration at an early stage due to environmental concerns around the plastics within the flowline composition.</p>	<p>Technically the burial method is considered feasible as trenching and backfill commonly used in industry. It has a low complexity and would be a time efficient solution.</p>	<p>This method incurred the least health and safety risks as it removes any requirement to handle contaminants on deck or throughout final disposal.</p> <p>Due to degradation of the flowline over a significant time, the contents within would still need to be considered as a planned release.</p>

Table 3-24: H4 flowline remediation option comparison summary

Criteria	Option 1: Transverse Cut and Recovery	Option 2: Longitudinal Cut and Recovery	Option 3: Establishing Communications Via Hot Taps	Option 4: Establishing Communications Via Rig/Vessel Deployed Coiled Tubing	Option 5: Elevation to Shallow Water	Option 6: Permanent Burial
Health & Safety Impact	All operations performed subsea. Flowline free flooding on recovery, allowing for release of residual hydrates. Minimises onshore handling.	Flowline free flooding on recovery, allowing for release of residual hydrates. H4 contents returned to deck via downline or subsea filtration/bladder. Potential hydrocarbon management on deck. High quantities of exposed flowline sections with potential stored energy.	Potential for residual hydrates following hot tapping operations. Hence, risk of pressure within flowline on recovery. H4 contents returned to deck via downline or subsea filtration/bladder. Potential hydrocarbon management on deck.	Substantial Health and Safety risk associated with any Coiled Tubing operation. Added challenges for the RLCT system due to the added subsea equipment.	High potential to exceed flowline design pressure limits if suspended in temperatures above 16 °C. H4 contents returned to deck via downline. Hence, requirement for hydrocarbon management on deck.	No health and safety impacts observed.
Environmental Impact	Planned release of flowline contents. Spill modelling completed reveals worst-case scenario releases are limited to low thresholds on surface and at shorelines	Planned release of flowline contents from engaging/re-engaging tooling. Significant plastic swarf from longitudinal cut over 2.2 km. Potential for flowline to unfurl, resulting in debris becoming detached from the main carcass and limited ability to recover.	Planned release of flowline contents from engaging/re-engaging tooling.	Potential flowline content release during CT BHA installation and removal.	Planned release of flowline contents from engaging/re-engaging tooling.	Planned release of flowline contents. Spill modelling completed reveals worst-case scenario releases are limited to low thresholds on surface and at shorelines. Degradation of plastics within flexible layers.
Technical Feasibility	Proven cutting and recovery solutions.	Concept only, complex and unproven solution. Potential for equipment to bury itself whilst travelling along the flowline. Limited confidence in ability to maintain flowline integrity throughout cutting over 2.2 km.	Flexible hot tapping has a limited track record. Has been used in the past for hydrate remediation. Ability to unblock sand or re-seal intervention points not confirmed.	Significant level of uncertainty and complexity associated with RLCT system suitable for H4 flowline condition.	Significant level of uncertainty and complexity in suspending a 2.2 km length of flexible flowline at a fixed depth using lift bags/buoyancy.	Trenching and backfilling operations are a proven methodology.
Schedule Risk (GD)	All essential tooling and equipment are available.	Complex unproven tooling and time-extensive methodology.	Complex tooling and time-extensive methodology. Pigging may also be required to sufficiently flush flowline prior to recovery.	Complex system requires significant time to be developed for H4 flowline conditions.	Natural dissociation of the hydrates in this scenario is a time-extensive process.	Minimal schedule risk.

3.7.4 Wellheads

Options for removing and recovering the wellheads are described in **Table 3-25**. If temporary or permanent guidebase(s) are found to be below the mudline and attempted recovery is unsuccessful, additional approvals will be sought for these facilities to be abandoned *in situ*.

Table 3-25: Wellhead cutting

Method	Description	Associated Discharges	Applicability
Mechanical internal cutting	A mechanical internal cutting tool is deployed from a crane and inserted into the inner well casing. An internal cut is made at sufficient depth below the mudline (>3 m) in accordance with international Well standard practice, such as Oil and Gas United Kingdom Well Decommissioning Guidelines (Oil and Gas UK, 2018).	Metal swarf within the well	Preferred Option
Diamond wire saw	A diamond wire saw will be deployed from a vessel and used to cut the wellhead above the mudline. The cut will leave up to 1 m of the wellhead exposed above the seabed due to limitations	Metal swarf within and outside the well.	Contingency Option

Once the wellhead has been cut, the following method will be used to recover the wellhead and associated infrastructure:

- ROV to secure rigging to the wellhead structure to prepare for removal via crane from vessel
- Remove wellhead infrastructure via crane from vessel
- Recover equipment individually to the vessel deck

If required, wellhead infrastructure may be set down on the seabed in the immediate vicinity of removal to enable safe rigging before recovery.

Wellhead infrastructure, once recovered, will be transported to shore for disposal by Woodsides contracted waste contractor in accordance with the waste management hierarchy described in **Section 7.8**.

3.7.5 Marine Growth Removal

Marine growth may be removed using a brush or high-pressure water jet and acid (applied with high-pressure hose) during surveys of the infrastructure or to gain access to lifting points during removal. The application of acid would be minimal, and cleaning mostly conducted by brush. Given the depth, there is very little marine growth on the equipment in the Stybarrow field.

Marine growth from recovered subsea infrastructure may be removed on the vessel deck using high-pressure water and brushes. Removed marine growth will be discharged to the marine environment from the deck.

3.7.6 Sediment Relocation

If sediment has built up around subsea infrastructure and wellheads and impedes its removal, an ROV-mounted suction pump may be used to move small amounts of sediment around its immediate vicinity, to allow safe recovery or inspection activities.

3.7.7 Set-down of Subsea Infrastructure

To enable safe rigging or in the event of issues during removal of subsea infrastructure and wellheads, infrastructure may be set down on the seabed for a short period. Set down will occur in proximity to the infrastructure’s original location. As per **Table 2-1**, all infrastructure will be removed prior to 31 March 2025.

3.7.8 Post Infrastructure Removal Surveys

A final as-left clearance survey will be undertaken after removal of infrastructure using high resolution side scan sonar (SSS) to acquire the survey data. The survey will be planned to obtain optimum representation of the completed infrastructure removal scope. More details on this survey are provided in **Section 3.8.2**.

3.8 Field Management Activities

Field management evaluates the infrastructure integrity and applies applicable measures, based on risk, to ensure subsea infrastructure may be removed in accordance with Section 572(3) of the OPGGS Act.

The condition of the equipment in the Stybarrow field is managed under the Stybarrow Field Post Cessation Subsea Integrity Management Plan (BHPB-00SC0N000-0002). This plan summarises inspection results, outlines the objectives for equipment integrity and describes the equipment management actions required to meet these objectives. A summary of the inspections and surveys of the Stybarrow subsea equipment since production commenced are provided in **Table 3-26**.

The key inspections during the production phase of the Stybarrow development were five-yearly remotely operated vehicle (ROV) and cathodic inspection survey of the subsea trees. These were undertaken in 2009 and 2014, before production ceased and the FPSO was removed from WA-32-L in 2015. Several inspections have been performed since production cessation to confirm the state of the equipment, the most recent of which was an extensive survey in June to August 2023 in preparation for decommissioning (**Table 3-26**). While not required by the Stybarrow Field Post Cessation Subsea Integrity Management Plan (BHPB-00SC0N000-0002), the June to August 2023 inspection aligns with the asset integrity philosophy of the plan.

Based on the findings of the subsea asset integrity assessment (refer **Section 3.5**) and recent surveys to inform decommissioning methodologies, the property is in good condition (as required under Section 572 of the OPGGS Act). Whilst there is no intention to carry out planned maintenance activities prior to equipment removal, further inspection activities to inform decommissioning planning may occur prior to removal activities, and where identified and deemed necessary maintenance and repair activities may occur to ensure that full removal cannot be precluded (**Section 3.8.1**). This is justified based on the following points:

- All hydrocarbon production centres are shut in.
- The DTM buoy has sunk and is stable on the seabed.
- Riser buoyancy has been removed and all risers laid on the seabed.
- The contents of the subsea infrastructure (except the blocked H4 flowline) have been displaced with seawater to preserve the equipment.
 - The blocked H4 flowline that was plugged during production is filled with sand, produced water, oil and gas hydrate. It is sealed at the ends and lying on the seabed.
- Seabed stability has been proven by inspections.
- Subsea equipment corrosion is not considered a concern as all structures are within their design life, have cathodic protection and are shown to be in good condition.
- Recovery methods for equipment will not rely on the integrity of the original lifting points, unless confirmed via inspection to be adequate. Alternate rigging methods will be utilised, such as use of equipment lifting baskets, grapples and purpose designed tooling.
- The integrity risk for release of floating equipment has been removed. All buoyant equipment has been removed or is currently resting on the seabed.

Non-routine field management activities are planned however may be performed after significant external events (such as third-party interactions) or when an anomalous condition has been reported. Any additional inspections will be undertaken in general accord with Woodside's Australia Production Unit Subsea Inspection and Monitoring Philosophy.

Table 3-26: Summary of inspections and surveys of the subsea equipment undertaken in the Stybarrow field since production commenced

Date	Inspection / Survey Description
August 2009	ROV GVI and 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 FPSO hull and mooring inspection
July 2012	ROV inspection and remediation of the Eskdale SDU
June 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
June 2015	ROV inspection of bend stiffener clamps
August 2015	Flushing and treating of flowline and umbilicals, disconnection of DTM and departure of the FPSO
November 2015	Disconnection of production flowlines from wells
May 2016	Echo sounder of DTM (found 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 GVI of DTM, risers and moorings
May 2017	Riser buoyancy modules removed
May 2018	Decommissioning baseline survey consisting of GVI, NORM measurements, seabed and water sampling
July 2023	Anchor and chain burial survey, GVI of infrastructure including structures, flowlines and umbilicals, LIDAR and measurement of DTM on seabed

3.8.1 General Inspection, Maintenance and Repair

Information on the subsea equipment is available from the inspections undertaken since the FPSO departed the Stybarrow field in 2015 to inform concept select and detailed engineering for the subsea equipment being removed. Further information may be required as the engineering of the removal methodologies is refined.

An inspection of the subsea equipment and the DTM has been completed in late Q2 and early Q3 2023 to inform detailed engineering of the removal methodologies.

If required, additional inspections may be performed on other subsea infrastructure using an ROV, typically to determine:

- general physical condition and integrity
- evidence of damage or disturbance
- evidence of scour, particularly around structure foundations
- evidence of debris or foreign objects

- evidence of anchor scars or other third-party interference
- marine growth coverage, type, and thickness.

Multi-beam echo sounder (MBES) or side scan sonar (SSS) mounted on an ROV may be required in some instances to aid inspections.

As described in Section 3.8, there is no planned maintenance or repair activities planned anticipated to be required prior removal, however if identified during inspections, maintenance or repair activities may be undertaken to ensure that full removal is not precluded.

3.8.2 Decommissioning Environmental Surveys

As described in **Section 2.4**, Woodside intends to apply to surrender WA-32-L at the completion of the activities in the three EPs described in **Section 3.5**. Woodside will carry out an environmental monitoring program as part of decommissioning activities to demonstrate compliance with the requirements of s. 270 of the OPGGS Act.

NOPSEMA's Section 270 *Consent to Surrender Title - NOPSEMA Advice (2022a)* outlines the regulator's expectations in relation to monitoring and surveys. These requirements expectations may be met by works undertaken during removal or equipment and vessels mobilised to undertake discrete survey or monitoring scopes.

3.8.2.1 Monitoring Program Design

The monitoring program design will consider all the historical petroleum activities that have occurred in the petroleum titles, including:

- historical exploration activities (e.g., exploration wells)
- construction activities (e.g., development drilling, installation of equipment etc.)
- production activities (e.g., production-related discharges)
- decommissioning activities (e.g., potential contaminant releases and seabed disturbance during equipment removal)

Given the nature and scale of the environmental impacts and risks from the petroleum activities in WA-32-L, the following environmental values are expected to be monitored:

- Visual observations of the seabed to determine the nature and extent of seabed disturbance and quantify benthic habitats
- Measurements of potential contaminants to sediments, such as metals, metalloids, NORM and hydrocarbons
- Confirmation of removal of all equipment required to be removed
- Confirmation of the as left condition of any equipment abandoned *in situ*

The monitoring program will:

- Use recognised monitoring techniques and methods to quantify the environmental values that may have been impacted by petroleum activities (e.g., recognised laboratory methods, laboratories accredited by the National Association of Testing Authorities for the analyses, compliance with method holding times, etc.)
- Sample representatively throughout WA-32-L, including at varying distances from known sources of impact (e.g., wells) and in areas not thought to have been impacted
- Include appropriate replication (e.g., sufficient replication of sites and samples within sites) in order to quantify variability in the environmental values being measured
- Include quality control measures – these will be dependent on the nature of sampling (e.g., duplicate, triplicate and blank samples for metals in sediments)
- Where practicable, sampling at locations where previous environmental monitoring (e.g., Cardno, 2019) to enable comparisons over time
- Confirm the removal of property and the location and condition of any equipment abandoned *in situ* (i.e., an as left survey)

The analysis of the data collected during the monitoring program will be used to determine if:

- the impacts and risks from the petroleum activities within the petroleum titles are of an acceptable level
- any damage to the seabed has been made good
- the conservation of natural resources has been provided for.

The design, implementation and analysis of a monitoring program that addresses the points above will be done by suitably qualified and experienced environmental scientists. A recognised monitoring design, such as beyond before-after control-impact (e.g., Underwood, 1994) will be implemented. Where practicable, hypotheses and statistical tests should be clearly stated and a priori power analysis done to inform sampling design. Acceptable levels will consider relevant requirements (e.g., sediment quality guidelines), consultation outcomes, Woodside's policies and the principles of ESD.

If unacceptable impacts are detected as having potentially occurred, Woodside will undertake additional monitoring to confirm whether the impact is unacceptable and determine the nature and spatial extent of the impact. Woodside will then review measures to reduce the unacceptable impact to ALARP. Woodside will consider remediation as part of the ALARP assessment. The ALARP assessment will depend on the nature and scale of any unacceptable impact.

Given the following points, Woodside considers unacceptable impacts within the petroleum titles to be highly unlikely:

- most of the equipment will be removed (including equipment exposed to production fluids)
- equipment proposed to be abandoned *in situ* is largely buried and will not credibly result in unacceptable impacts
- environmental sampling within the petroleum titles to date has shown little contamination of the environment that exceeds recognised guidelines
- the environmental impacts and risks from the equipment removal activities are managed to a level that is acceptable and ALARP.

3.8.2.2 Decommissioning Sediment Sampling Survey

A decommissioning sediment sampling survey will be conducted to confirm that petroleum activities undertaken in the title area have not resulted in unacceptable chemical contamination above relevant sediment quality thresholds and background levels.

The decommissioning sediment sampling survey will include a desktop review of the historical petroleum activities that have occurred in the petroleum title, such as:

- historical exploration activities (e.g., exploration wells)
- construction activities (e.g., development drilling, installation of equipment etc.)
- production activities (e.g., production-related discharges)
- decommissioning activities (e.g., potential contaminant releases and seabed disturbance during equipment removal)

The decommissioning sediment sampling survey will also evaluate historical sediment sampling data from the title area such as the 2019 Cardo survey (**Section 4.4**) to identify the presence of any contaminants of concern. The decommissioning sediment sampling survey will be carried out by suitably qualified and experienced personnel using a recognised study design informed by and addressing any identified data gaps or data quality shortcomings from previous sediment sampling surveys in the title area. The physico-chemical analyses will include, but not be limited to, parameters such as:

- sediment characteristics; organotins, polychlorinated biphenyls and radionuclides; hydrocarbons; metals metalloids; NORM and infauna.
- oxidation state of the sediment, as well as any other parameters deemed appropriate by the study team.
- the survey may also include water quality sampling and a visual assessment of benthic faunal characteristics and epifauna invertebrates on infrastructure in the title area.

The decommissioning sediment sampling survey will use similar sample locations as the previous environmental survey (e.g., Cardo, 2019), where practicable, to enable temporal data comparisons. In addition, sediment

sampling will be carried out at sites in the vicinity of decommissioning activities that were not included in the Cardno environmental survey. This may include in the vicinity of subsea discharges, other drill centres and/or other sites where equipment has either been removed or left in situ during decommissioning.

The analysis of sediment samples will take place at an accredited laboratory. The reporting of the decommissioning sediment sampling survey will compare results against acceptable levels of contaminants of concern based on relevant sediment quality guidelines and background levels of contaminants. Woodside will review the results against consultation outcomes, Woodside's policies and the principles of ESD. Results of monitoring will be used to assess any impacts caused by titleholder activities on: ecosystem function, target species for any currently known fisheries, hydrocarbons and other mineral resources of the seabed and subsoil. If necessary, Woodside will develop management plans to address any unacceptable risks and/or impacts identified by the decommissioning sediment sampling survey.

Figure 3-13 sets out the decision framework for the decommissioning sediment sampling survey.

3.8.2.3 Decommissioning Seabed Clearance Survey

A decommissioning "as-left" clearance survey will be conducted to confirm the seabed around the former sites of removed installations and/or the sites of any equipment decommissioned in situ is clear of potential hazards to other users of the sea and that petroleum activities, including decommissioning, have not resulted in unacceptable damage to the seabed or subsoil in the title area.

The decommissioning seabed clearance survey will be carried out after removal of the subsea equipment within the title area to: (i) confirm that decommissioning activities (removal of infrastructure) have been carried out as planned; (ii) confirm the seabed around the former sites of equipment is clear of potential hazards to other users of the sea; (iii) identify and confirm the extent of any seabed or subsoil disturbance around the former sites of subsea equipment; and (iv) identify the position, general physical condition and burial status of any infrastructure left in the title area.

Decommissioning seabed clearance survey data will be acquired using a variety of equipment which may include, but not be limited to, the following:

- sidescan Sonar (SSS) towed behind the vessel or on an ROV
- visual Recording Cameras mounted on an ROV
- magnetometer and magnetic pipe tracker mounted on an ROV to confirm depth of burial of any infrastructure left in situ
- ultrashort baseline (USBL) located on the vessel to confirm the positioning of various equipment, as required
- other equipment will also be used for the purposes of vessel / ROV positioning and measurement of survey conditions.

3.8.2.4 Decommissioning Environmental Surveys Reporting

Progress towards completion of the survey and monitoring program will be communicated to NOPSEMA in the annual reports required by Generation Direction 833 (**Section 7.6.6** and **11.10.2.2**) and the environmental performance reports submitted in relation to the three EPs described in **Section 3.5** and information used to support any sea dumping permit application.

Based on the survey work program outlined above, Woodside believes that the OPGGS Act s. 270 requirements will be addressed within the title area since:

- most of the equipment brought into the title area will be removed during decommissioning
- equipment proposed to be abandoned in situ is generally composed of inert materials and largely buried
- environmental sampling within the title area to date has shown little contamination of the environment above recognised threshold guidelines (see **Section 4.4**)
- the environmental risks and impacts associated with decommissioning equipment removal activities will be managed to a level that is both ALARP and acceptable.

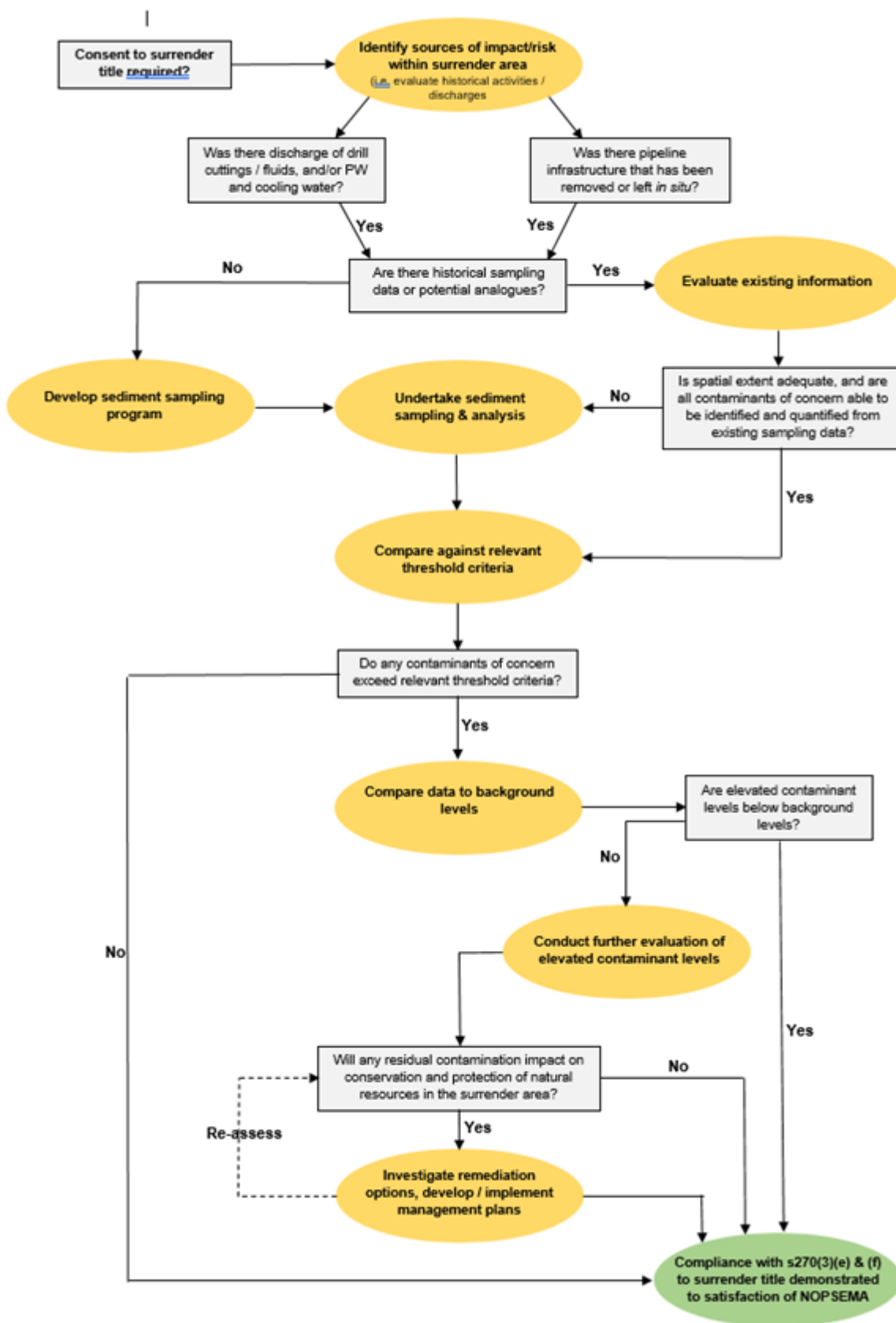


Figure 3-13: Decision support framework for sediment sampling for title surrender

3.9 Project Vessels

The vessels required to perform the petroleum activity are:

- general support / supply vessel
- heavy lift vessel
- construction support vessel / installation vessel
- anchor handling tug vessels.

Vessel specifications for the above are provided in **Table 3-27**.

Typically, only one general support vessel will be performing field management in the operational area at any time. When considering the potential for SIMOPS, a maximum of four project vessels and one MODU may be in the operational area during subsea infrastructure removal activities (**Section 3.4.1**).

General support vessels are used to transport equipment and materials between the operational area and port during subsea infrastructure removal activities. Other project vessels will make regular trips between the operational area and port for routine, non-routine, and emergency operations.

A variety of materials are routinely bulk transferred from general support vessels, including equipment, fluids or chemicals and waste. Loading and back-loading to general support vessels from other project vessels is performed using cranes to lift materials.

All project vessels will be commercial vessels with a suitable survey class for the activities they are performing. The vessels will run on marine diesel oil (MDO); no intermediate or heavy fuel oils will be used.

Table 3-27: Indicative vessel specifications for project vessels

Parameter	General Support / Supply Vessels	Construction Support Vessels	Anchor Handling Tug Vessels	Heavy Lift Vessel
Draft (max) (m)	6 to 8	8 to 9	8 to 9	9 - 11
Length (m)	75 to 100	110 to 130	110 to 130	211
Berths (persons)	100	130	130	305
Gross tonnage (t)	3,000	5,000	3,000	50,000
Fuel type	MDO	MDO	MDO	MDO
Total fuel volume (m ³)	2,000	3,000	3,000	3,600
Volume of largest fuel tank (m ³)	250	1,000	800	1,000

3.9.1 Vessel Operations

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

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

Operational discharge streams from project vessels include:

- deck drainage
- putrescible waste and sewage/grey water
- oily water
- cooling water
- desalination plant effluent (brine) and backwash water discharge
- ballast water.

Further details about the above discharge streams from project vessels are included in **Section 7.5**.

3.9.2 Refuelling

Fuel transfers that may occur within the operational area include refuelling of cranes, helicopters or other equipment as required. Vessel refuelling and bunkering at sea will occur during the subsea infrastructure removal activities (refer to **Section 8.2**).

3.9.3 Dynamic Positioning

The project vessels will not anchor in the operational area, instead using dynamic positioning (DP) to maintain position. DP uses satellite navigation and radio transponders in conjunction with thrusters to maintain the position.

3.9.4 Remotely Operated Vehicles

ROVs will be used throughout the petroleum activity, typically for:

- visual inspections and observations
- seabed and hazard survey
- placement of ROV tool baskets on the seabed
- marine growth cleaning on infrastructure
- sediment relocation
- tooling and infrastructure cutting
- post-infrastructure removal seabed survey.

3.9.5 Helicopters

During the equipment removal scope, crew changes may be performed using helicopters as required. Helicopter operations within the operational area are limited to take-off and landing on the helideck. Crew changes are not required during the field management scope.

3.10 Management of Waste and Recovered Infrastructure

Wastes generated may be broadly classified into two categories:

- General non-hazardous solid wastes
- Hazardous solid and liquid wastes
- Decommissioned infrastructure

Non-hazardous solid wastes include recovered infrastructure and wastes created on project vessels, such as cardboard, plastic, aluminium, and paper. Hazardous wastes are materials that are harmful to human health or the environment and include waste prescribed in the Commonwealth *Hazardous Waste (Regulation of Exports and Imports) Act 1898* and WA Environmental Protection (Controlled Waste) Regulations 2004. Hazardous wastes stored on vessels may include:

- lubricating oils, hydraulic fluids, cleaning and cooling agents

- oil filters and batteries
- oily rags
- paint, aerosol cans
- medicinal wastes
- acids/caustics and solvents

3.10.1 Management of Wastes and Recovered Infrastructure

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

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

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

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

Woodside has engaged suitably experienced and qualified contractors for disposal of the Stybarrow subsea infrastructure, and is in the process of engaging suitable contractors for disposal of the DTM and H4 flowline. The recovered infrastructure will be managed through the project's contracting strategy which will include an infrastructure disposal strategy where waste management solutions will be assessed against the principles of the waste management hierarchy described in **Section 7.8** and shown in **Figure 7-8**. Woodside continues to work with contractors to explore end state options that align with the waste hierarchy (**Section 7.8**), with higher focus assessing the available options for components that have traditionally been disposed via landfill. Woodside is planning that 90% of material (by weight) will be able to be either reused, repurposed or recycled.

Options for plastics include identifying potential recycling, upcycling, waste to energy opportunities. Pathways are subject to inspection and sampling of the material once received at the onshore laydown site. Where it is deemed no other feasible alternative exists, material requiring landfill will be disposed of at an appropriate licensed facility after sampling is conducted to determine contaminant levels where appropriate. Further details including assessment of the environmental impacts and risks associated with waste is described in **Section 7.8**.

3.11 Chemical Assessment Process

Chemicals will be used operationally for:

- marine growth removal, such as acids (note there is very little marine growth on Stybarrow equipment as the water depth is not conducive for substantial fouling)
- subsea infrastructure cuttings, such as lubricants.

Chemicals will be stored on-board the project vessels as required within dedicated holding tanks for liquid chemicals / chemical mixtures and the sack room for dry chemicals. Hazardous chemicals are stored within bunds or in secure areas to prevent accidental overboard discharges. All chemicals that may be operationally released or discharged to the marine environment from either planned activities or unplanned events are accompanied with relevant Safety Data Sheets (SDS).

3.11.1 Chemical Assessment

All chemicals that may be operationally released or discharged to the marine environment for the petroleum activities described in this EP will be evaluated using a defined framework and set of tools, to ensure the potential impacts are acceptable, ALARP and meet Woodside’s expectation for environmental performance.

The chemical assessment process follows the principles outlined in the Offshore Chemical Notification Scheme (OCNS), which manages chemical use and discharge in the United Kingdom and the Netherlands. It applies the requirements of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention). The OSPAR Convention is widely accepted as best practice for chemical management.

All chemical substances listed on the OCNS ranked list of registered products have an assigned ranking based on toxicity and other relevant parameters, such as biodegradation and bioaccumulation, in accordance with one of the two schemes (as shown in **Figure 3-14**).

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

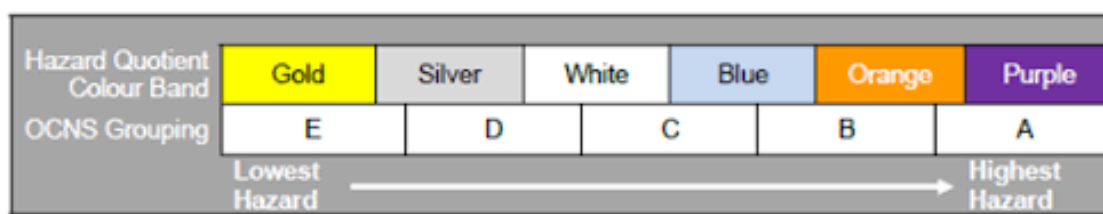


Figure 3-14: OCNS ranking scheme

Chemicals fall into the following assessment types:

- **No further assessment:** Chemicals with a HQ band of Gold or Silver or an OCNS ranking of E or D with no substitution or product warnings do not require further assessment. Such chemicals do not represent a significant impact on the environment under standard use scenarios and are, therefore, considered ALARP and acceptable.
- **Further assessment/ALARP justification required:** The following types of chemicals require further assessment to understand the environmental impacts of discharge into the marine environment:
 - chemicals with no OCNS ranking
 - chemicals with a HQ band of White, Blue, Orange, Purple or OCNS ranking of A, B, or C
 - chemicals with an OCNS product or substitution warning

3.11.2 Further Assessment/ALARP Justification

This includes assessing the ecotoxicity, biodegradation and bioaccumulation of the chemicals in the marine environment in accordance with the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) Hazard assessment and the Department of Mine and Petroleum (DMP) Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline.

3.11.2.1 Ecotoxicity

Chemical ecotoxicity is assessed using the criteria used by CEFAS to group chemicals based on ecotoxicity results (**Table 3-28**). If a chemical has an aquatic or sediment toxicity within the criteria for the OCNS grouping of D or E, this is considered acceptable in terms of ecotoxicity.

Table 3-28: CEFAS OCNS grouping based on ecotoxicity results

Initial Grouping	A	B	C	D	E
Results for aquatic-toxicity data (ppm)	<1	>1-10	>10-100	>100-1,000	>1,000
Results for sediment toxicity data (ppm)	<10	>10-100	>100-1,000	>1,000-10,000	>10,000

Note: Aquatic toxicity refers to the *Skeletonema costatum* EC50, *Acartia tonsa* LC50 and *Scophthalmus maximus* (juvenile turbot) LC50 toxicity tests; sediment toxicity refers to *Corophium volutator* LC50 test.

3.11.2.2 Biodegradation

The biodegradation of chemicals is assessed using the CEFAS biodegradation criteria, which align with the categorisation outlined in the DMP Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline.

CEFAS categorises biodegradation into the following groups:

- **Readily biodegradable:** results of more than 60% biodegradation in 28 days to an OSPAR harmonised offshore chemical notification format (HOCNF) accepted ready biodegradation protocol.
- **Inherently biodegradable:** results more than 20% and less than 60% to an OSPAR HOCNF accepted ready biodegradation protocol or result of more than 20% by OSPAR accepted inherent biodegradation study.
- **Not biodegradable:** results from OSPAR HOCNF accepted biodegradation protocol or inherent biodegradation protocol are less than 20%, or half-life values derived from aquatic simulation test indicate persistence.

Chemicals with more than 60% biodegradation in 28 days to an OSPAR HOCNF accepted ready biodegradation protocol are considered acceptable in terms of biodegradation.

3.11.2.3 Bioaccumulation

The bioaccumulation of chemicals is assessed using the CEFAS bioaccumulation criteria, which align with the categorisation outlined in the DMP Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline.

The following guidance is used by CEFAS:

- Non-bioaccumulative: $\text{LogPow} < 3$, or $\text{BCF} \leq 100$ and molecular weight is ≥ 700 .
- Bioaccumulative: $\text{LogPow} \geq 3$ or $\text{BC} > 100$ and molecular weight is < 700 .

Chemicals that meet the non-bioaccumulative criteria are considered acceptable.

If a product has no specific ecotoxicity, biodegradation or bioaccumulation data available, options to be considered are as follows:

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

3.11.2.4 Alternatives

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

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

3.11.2.5 Decision

Once the further assessment/ALARP justification has been completed, concurrence is required from the relevant environment advisor that the environmental risk as a result of chemical use is ALARP and acceptable.

4 Description of the Environment

The purpose of this section is to address the requirements of Regulation 13(2) and 13(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 two spatial areas:

- the operational area – the area where planned activities will occur and includes the area encompassing a 1,500 m radius around the subsea infrastructure and wellheads.
- the wider EMBA. This is the environment that may be affected by the worst-case hydrocarbon spill scenario identified as relevant to the activity (**Figure 4-1**).

The information contained in this section has been used to inform the evaluation and assessment of the environmental impacts and risks presented in **Section 7** and **8**. The level of detail is appropriate to the nature and scale of the impacts and risks to the particular values and sensitivities.

A detailed and comprehensive description of the environment in the operational area and EMBA is provided in **Appendix C**.

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).

4.1 Determination of the Environment that may be Affected

Stochastic hydrocarbon dispersion and fate modelling (described in **Section 8.1**) has been performed on the worst-case hydrocarbon release, which was determined to be a 1,000 m³ marine diesel oil (MDO) release by a vessel collision (described in **Section 8.2**). The results have been used to inform the determination of the EMBA. The EMBA (**Figure 4-1**) encompasses the outer most boundary of the worst-case spatial extent of four hydrocarbon phases (refer **Table 4-1**). The exposure threshold values used to define the EMBA are presented in **Table 4-1** and have been justified in **Section 8.1.2**. Unless stated otherwise, all references to the EMBA in this EP refer to the socio-cultural EMBA shown in **Figure 4-1**. The ecological EMBA is entirely contained within the socio-cultural EMBA.

Table 4-1: Hydrocarbon components and EMBA exposure thresholds

Hydrocarbon Component	EMBA Exposure Value
<i>Socio-cultural EMBA</i>	
Surface hydrocarbons	1 g/m ²
Shoreline hydrocarbons	10 g/m ²
Entrained hydrocarbons	100 ppb
Dissolved aromatic hydrocarbons	50 ppb
<i>Ecological EMBA</i>	
Surface hydrocarbons	10 g/m ²
Shoreline hydrocarbons	100 g/m ²
Entrained hydrocarbons	100 ppb
Dissolved aromatic hydrocarbons	50 ppb

Hydrocarbon contact below the defined thresholds may occur outside the socio-cultural and ecological EMBA; however, the effects of these low exposure values are unlikely to result in environmental impacts. The EMBA presented does not represent the predicted coverage of any one hydrocarbon spill or a depiction of a slick or plume at any point in time. Rather, the areas are a composite of many theoretical paths, integrated over the full duration of the simulations under various metocean conditions.

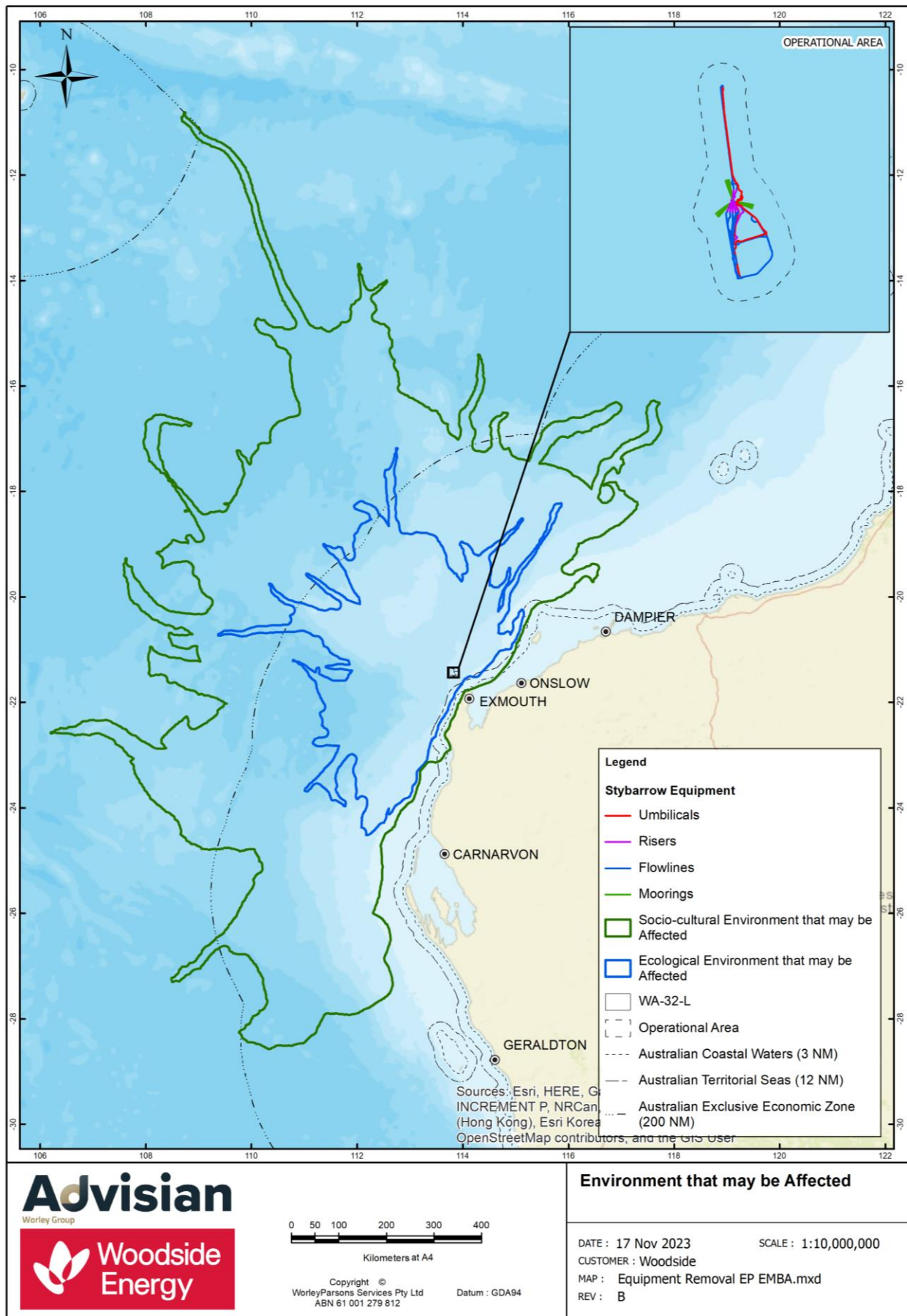


Figure 4-1: Socio-cultural and ecological EMBA for the petroleum activity

4.2 Relevant Environmental Values and Sensitivities

Regulation 13(2) of Environment Regulations states that “*the environment plan must:*

- 13(2)(a) *Describe the existing environment that may be affected by the activity; and*
- 13(2)(b) *Include details of the particular relevant values and sensitivities (if any) of that environment”.*

Regulation 13(3) of the Environment Regulations states that “*Without limiting paragraph 13(2)(b), particular relevant values and sensitivities may include any of the following:*

- 13(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 operational area and the EMBA.

A full description of the values and sensitivities relevant to the operational area and EMBA is provided in **Appendix C**, along with the PMST Search Reports.

4.2.1 Bioregions

The operational area is located approximately 54 km north-west of Exmouth, Western Australia and within Commonwealth waters of the North West Marine Region. The EMBA overlaps the following Integrated Marine and Coastal Regionalisation of Australia (IMCRA) Provincial Bioregions (**Figure 4-2**):

- Northwest Province (overlaps Operational Area)
- Central Western Shelf Transition (24 km from Operational Area)
- Northwest Shelf Province (31 km from Operational Area)
- Central Western Transition (58 km from Operational Area)
- Northwest Transition (257 km from Operational Area)
- Central Western Shelf Province (297 km from Operational Area)
- Central Western Province (471 km from Operational Area)
- Christmas Island Province (1,232 km from Operational Area)

Appendix C summarises the characteristics of these marine bioregions.

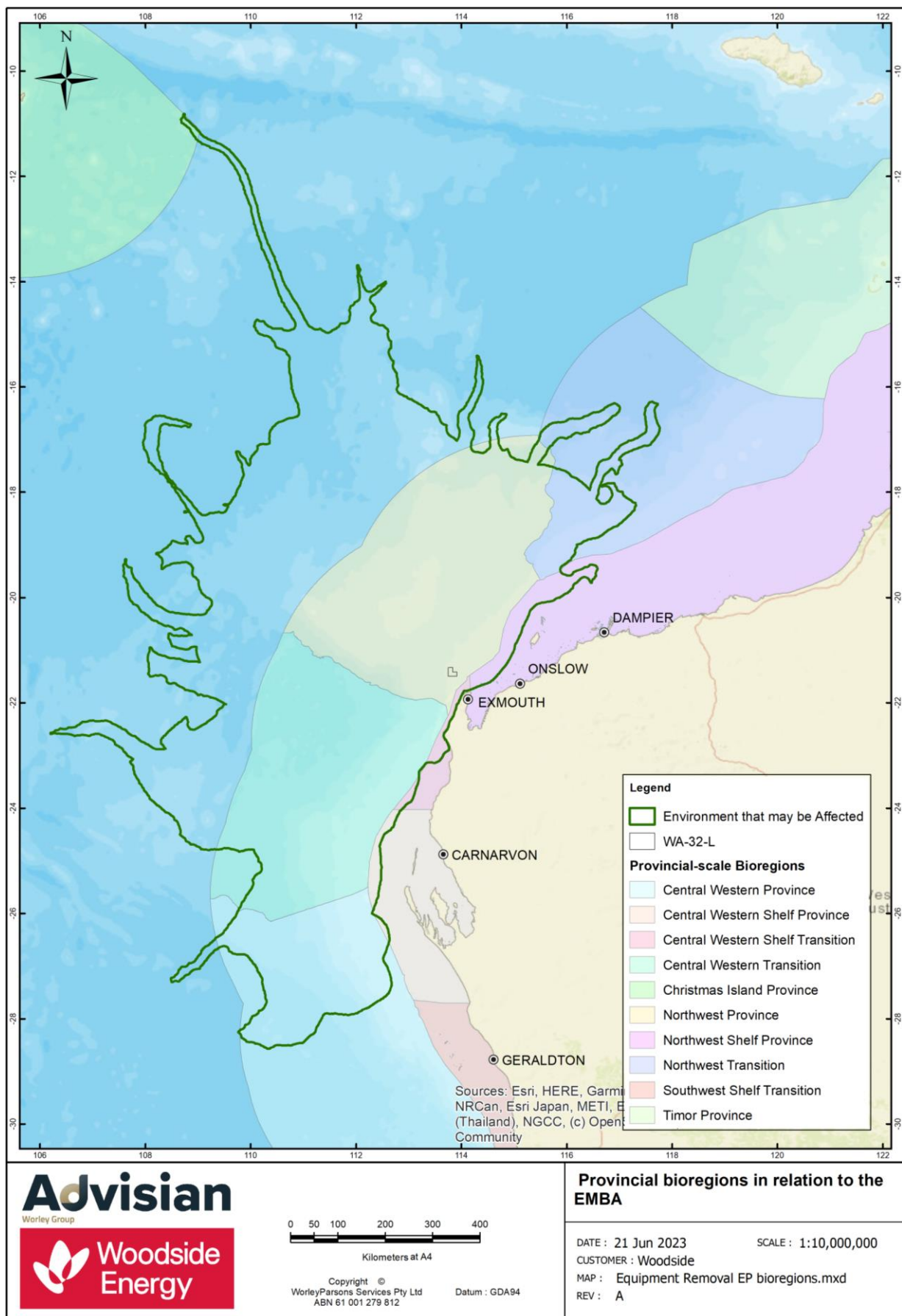


Figure 4-2: IMCRA 4.0 provincial bioregions in relation to the operational area and EMBA

4.2.2 Matters of National Environmental Significance

Table 4-2 and **Table 4-3** summarise the MNES identified as potentially occurring within the operational area and EMBA, respectively, as determined by the PMST results (**Appendix C**).

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

Table 4-2: Summary of MNES within operational area

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 4.6.1
Listed Migratory Species ^{1, 2}	31	Section 4.6.1

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.

Table 4-3: Summary of MNES within EMBA

MNES	Number	Relevant Section
World Heritage Properties	1	Section 4.5.2
National Heritage Places	2	Section 4.5.3
Wetlands of International Importance (Ramsar)	0	Not applicable
Marine Protected Areas (Commonwealth and State)	12	Section 4.5.5
Listed Threatened Ecological Communities	0	Not applicable
Listed Threatened Species ¹	53	Section 4.6.1
Listed Migratory Species ^{1, 2}	70	Section 4.6.1

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.

4.3 Stybarrow Field Environmental Surveys

Woodside commissioned an environmental survey of the Stybarrow field (Cardno, 2019), 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 overlaps the operational area. Where relevant these studies have been referenced within this Section and throughout the EP.

4.4 Biological Environment

This sub-section focuses on the biological environment in the operational area. Refer to **Appendix C** for description of the biological environment in the EMBA.

4.4.1 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 4-3**). 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 4-4**). 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 4-5**):

- 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 4-6**), 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 4-7**). 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 4-7**), 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 4-8**). 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.

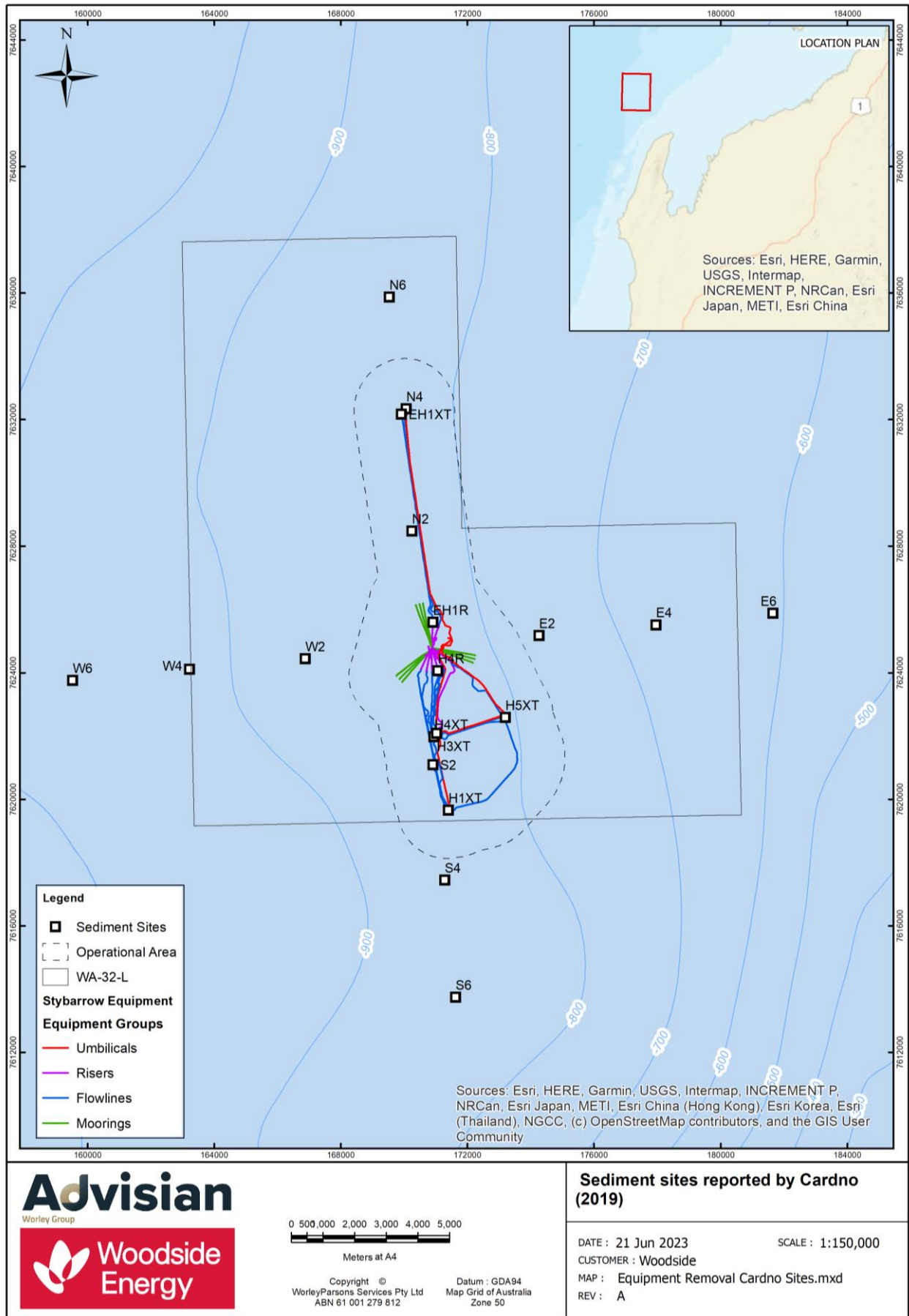


Figure 4-3: Cardno (2019) sediment sample sites

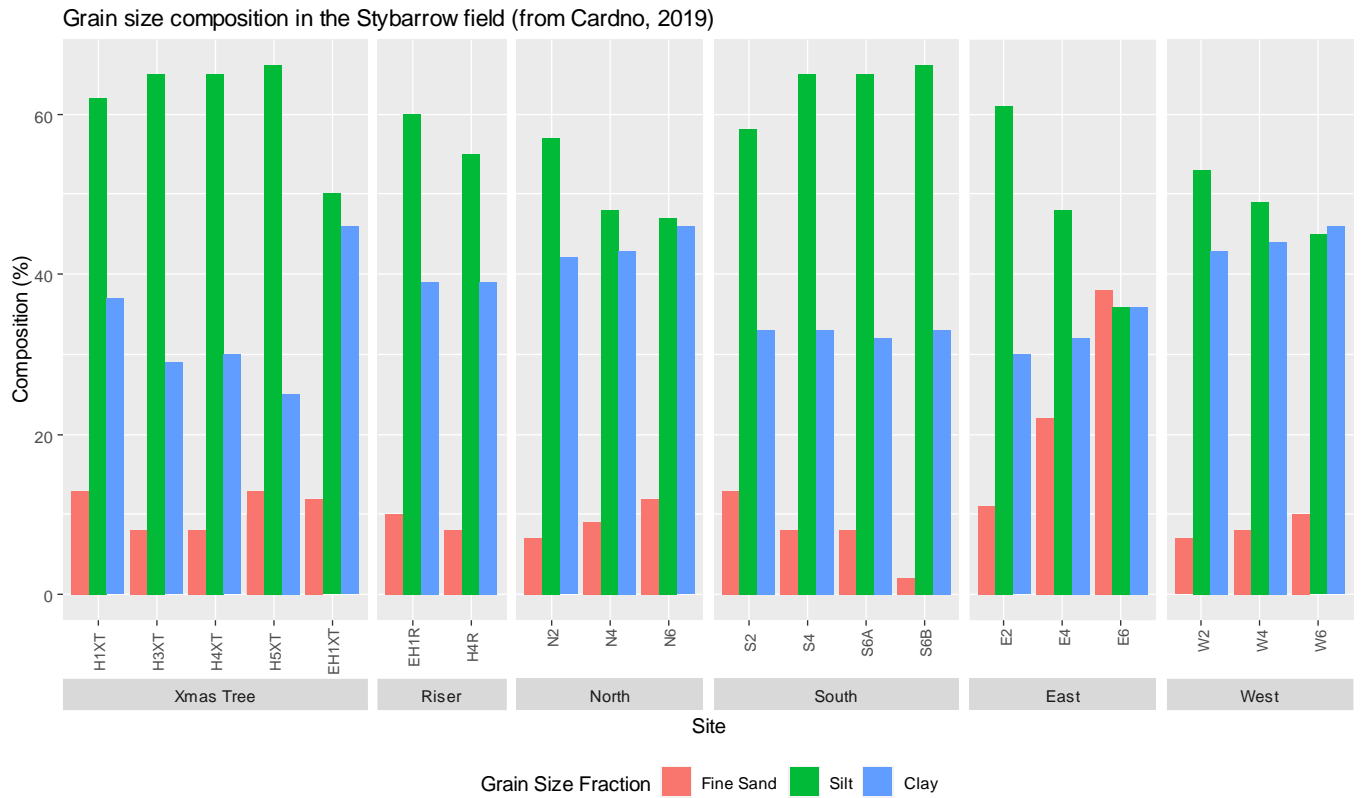


Figure 4-4: Percent composition of sediment grain size class in the Stybarrow field (from Cardno, 2019)

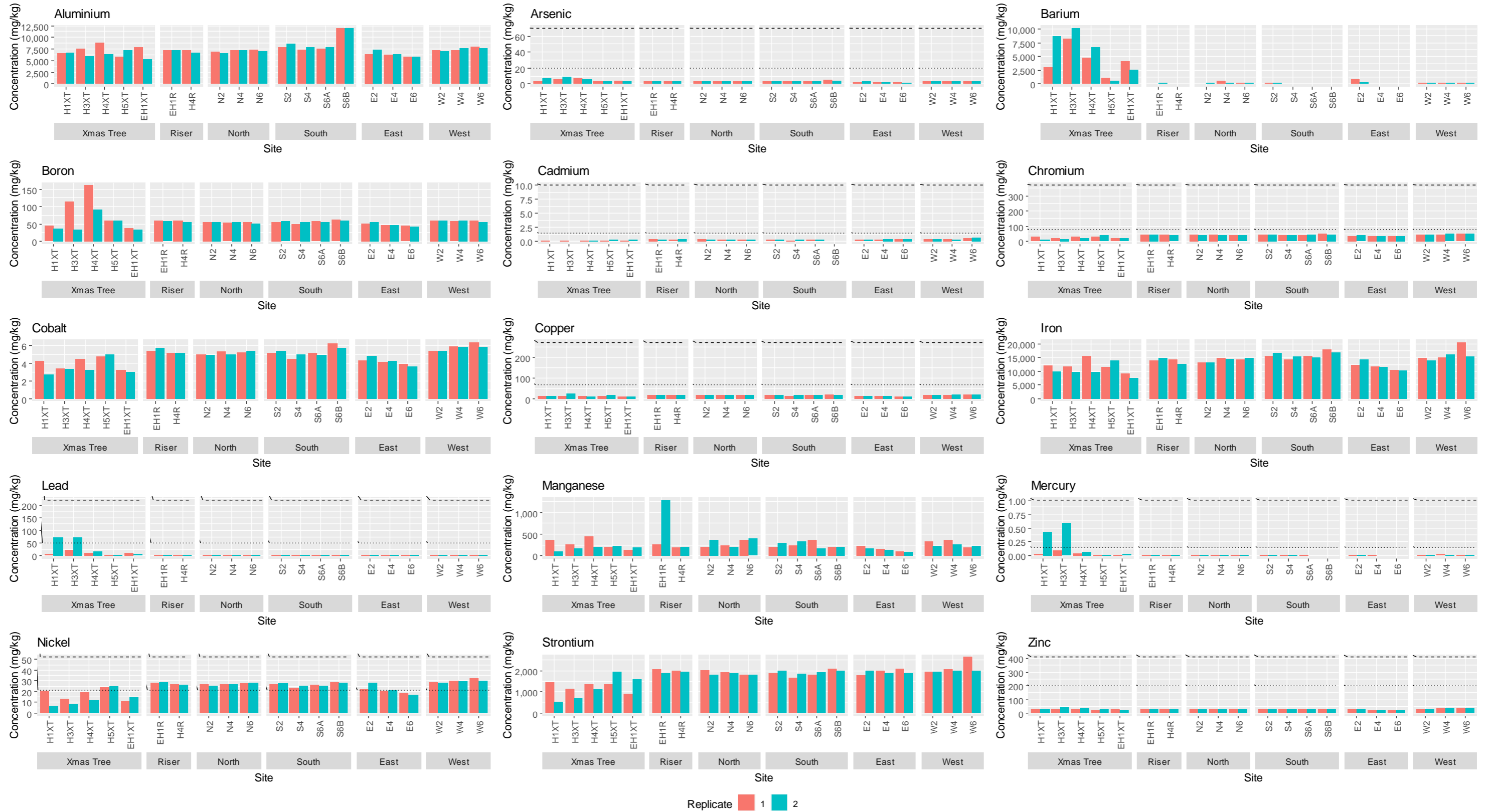


Figure 4-5: Concentrations of metals in the Stybarrow field with DGV (dotted lines) and GV-High (dashed lines) where available (after Cardno, 2019)

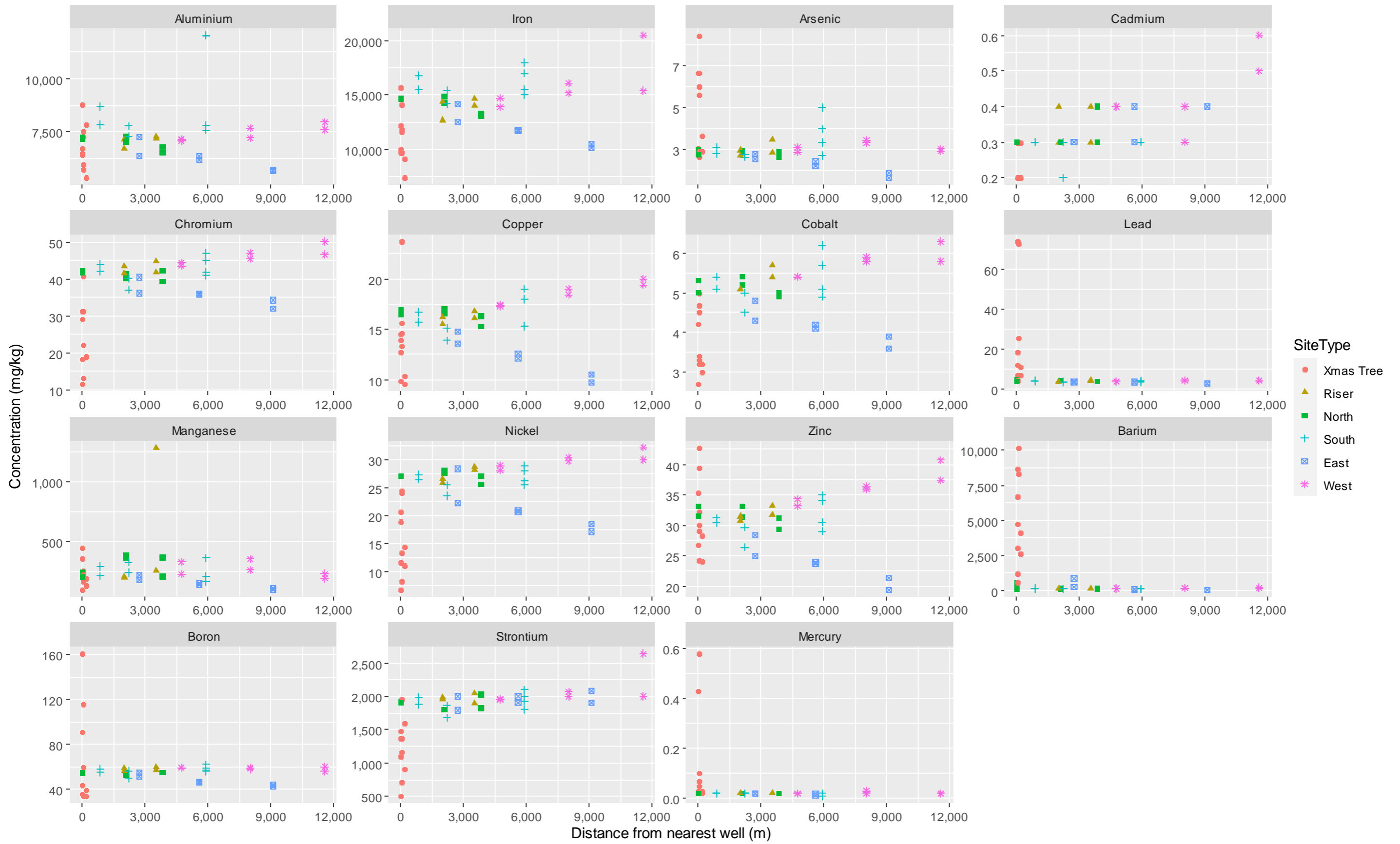


Figure 4-6: Concentrations of metals in sediments and distance from nearest well

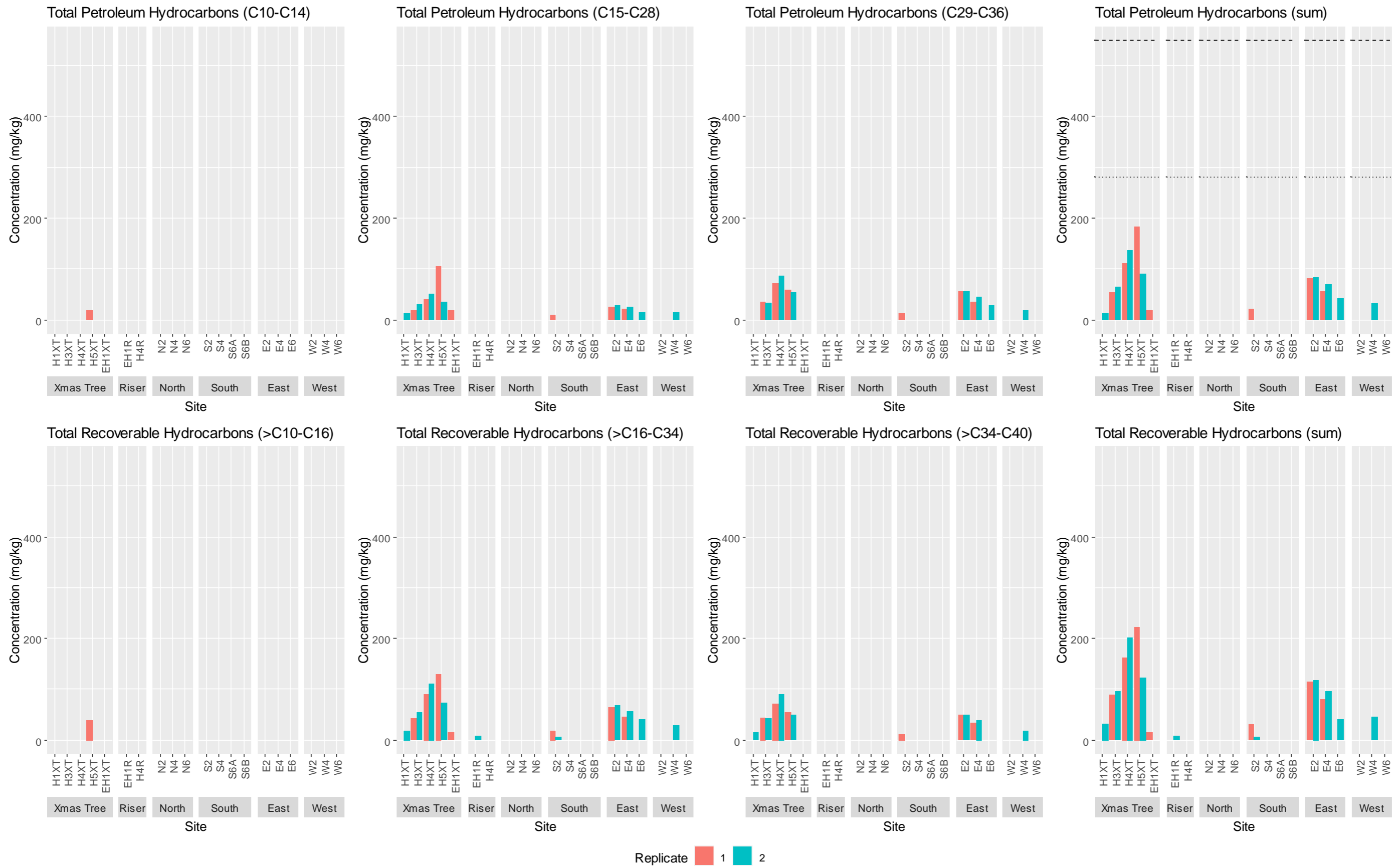


Figure 4-7: Concentrations of hydrocarbons (TPH and TRH) in the Stybarrow field with DGV (dotted lines) and GV-High (dashed lines) where available (after Cardno, 2019)

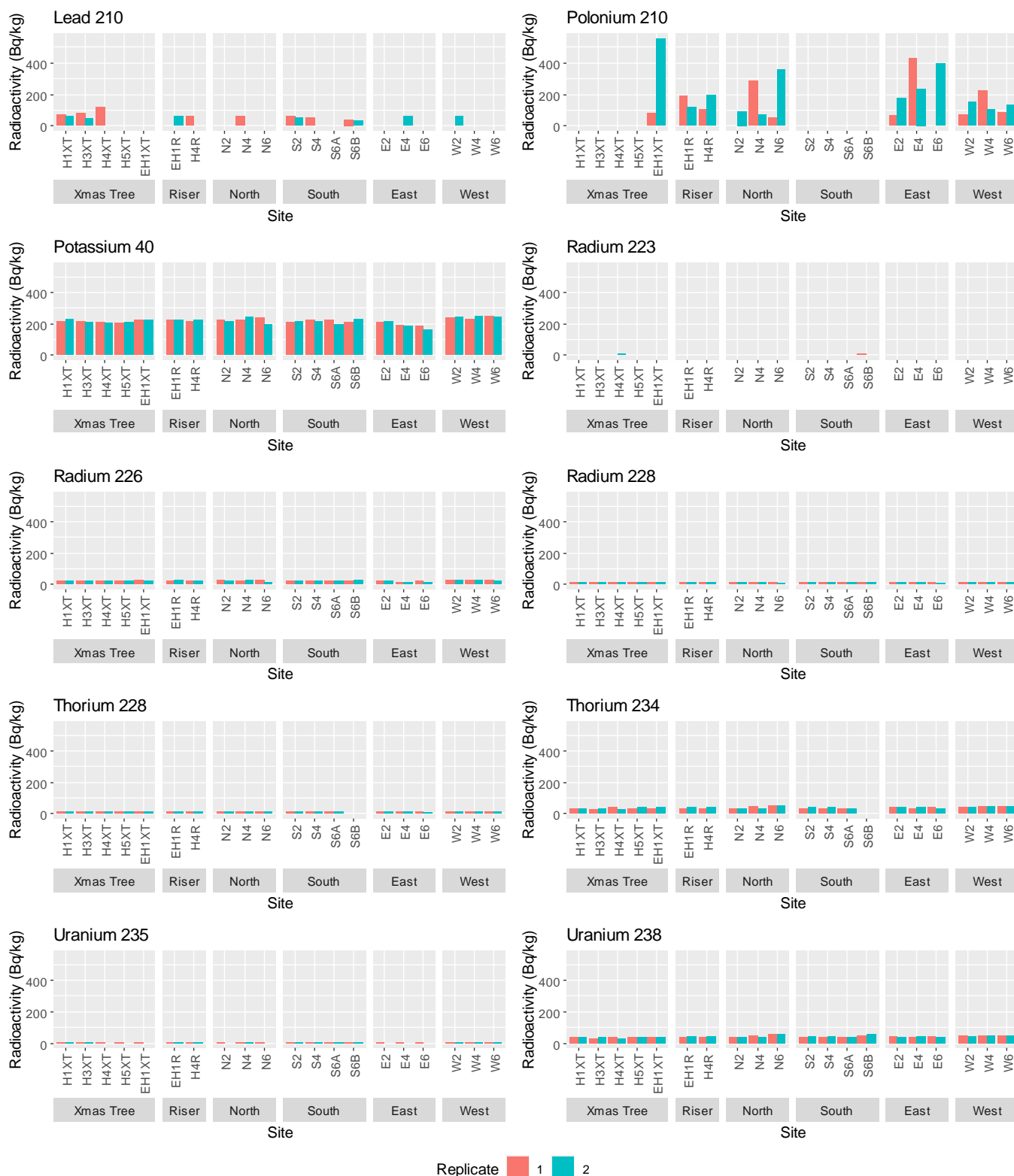


Figure 4-8: Radioactivity of radioisotopes in the Stybarrow field (after Cardno, 2019)

4.4.2 Benthic Habitats and Infauna

Cardno (2019) observed only unconsolidated sediment within WA-32-L, with no areas of hard substate (except for 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 commonly 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 (Cardo, 2019). This is consistent with other surveys in the region (e.g., RPS, 2013).

An environmental survey and literature review of canyons in the region by BMT Oceanics (2016) concluded the following:

- The North and South Enfield Canyons are regarded as bathyal which is defined as 200-2,000 m, ~1% gravel, ~70% mud, ~ 5 °C temperature at the seabed, and a 1° slope.
- Typical benthic habitats within the Enfield region were bare, unconsolidated, muddy, soft substrate and typically support sparse assemblages of filter and deposit-feeding epibenthic fauna.
- Outcropping rock and consolidated or coarser sediment habitats appeared to be minor components of the seabed.
- Distribution of biota was patchy, with crustaceans, molluscs, echinoderms, cnidarians and poriferans recorded. Motile scavengers were regarded as the dominant group including crabs and shrimps. Echinoderms were less abundant and consisted of ophiuroids, holothurians, echinoids and asteroids.

Two key ecological features (KEFs) occur within the Operational Area and are of regional importance for either a region's biodiversity or its ecosystem function and integrity. These are described in **Section 4.5.1**:

- Continental Slope Demersal Fish Communities
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula

4.4.3 Water Quality

Cardo (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.

4.5 Protected or Significant Areas

4.5.1 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.

The presence of KEFs within the operational area and EMBA is summarised in **Table 4-4** and a detailed description of these KEFs is provided in **Appendix C**.

KEFs within the Operational Area and EMBA are presented in **Figure 4-9**.

Table 4-4: Key Ecological Features in the operational area and EMBA

KEF	Distance from Operational Area (km)
Continental Slope Demersal Fish Communities	overlaps
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	overlaps
Commonwealth waters adjacent to Ningaloo Reef	24
Ancient coastline at 125 m depth contour	34
Exmouth Plateau	53
Western demersal slope and associated fish communities	471
Wallaby Saddle	483
Perth Canyon and adjacent shelf break, and other west coast canyons	706

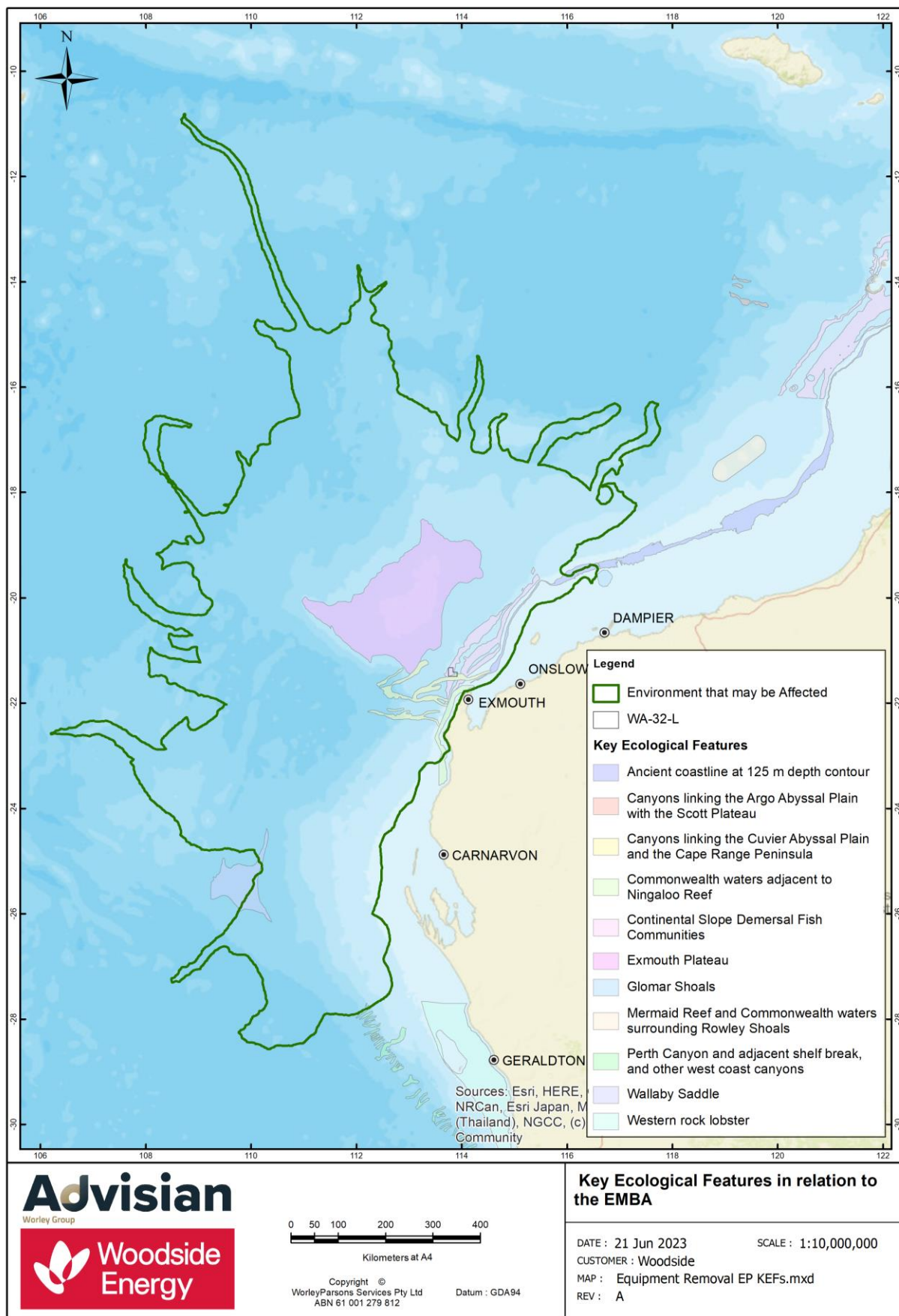


Figure 4-9: Key Ecological Features within the Operational Area and EMBA

4.5.2 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 Operational Area. The EMBA intercepts the boundary of one World Heritage Property: the Ningaloo Coast, approximately 24 km from the operational area at the closest point (refer **Appendix C**).

4.5.3 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 operational area. Two National Heritage Properties occur within the EMBA (refer **Appendix C**):

- the Ningaloo Coast (approximately 24 km from the operational area)
- HMAS Sydney II and HSK Kormoran Shipwreck Sites (approximately 581 km from the operational area)

4.5.4 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 National Heritage Places within the operational area. One Commonwealth Heritage Property lies within the EMBA (refer **Appendix C**):

- Ningaloo Marine Area - Commonwealth Waters (approximately 24 km from the operational area)

4.5.5 Protected Areas

There are no Australian or State Marine Parks located in the operational area. Seven Australian Marine Parks and five State protected areas overlap the EMBA (**Table 4-5**, **Figure 4-10** and **Figure 4-11**). A description of these protected areas is provided in **Appendix C**.

Table 4-5: Commonwealth marine protected areas within the operational area and EMBA

Value / Sensitivity	IUCN Category or Relevant Park Zone	Distance from Operational Area (km)
<i>Australian Marine Parks</i>		
Gascoyne	Multiple Use Zone (IUCN Category VI)	5
	Habitat Protection Zone (IUCN Category IV)	103
	National Park Zone (IUCN Category II)	196
Ningaloo	Recreational Use Zone (IUCN Category IV)	24
	National Park Zone (IUCN Category II)	131
Montebello	Multiple Use Zone (IUCN Category VI)	183
Carnarvon Canyon	Habitat Protection Zone (IUCN Category IV)	320
Shark Bay	Multiple Use Zone (IUCN Category VI)	329
Abrolhos	Habitat Protection Zone (IUCN Category IV)	469
	Multiple Use Zone (IUCN Category VI)	627
Argo-Rowley Terrace	Multiple Use Zone (IUCN Category VI)	489

Value / Sensitivity	IUCN Category or Relevant Park Zone	Distance from Operational Area (km)
<i>Western Australian Protected Areas</i>		
Ningaloo Marine Park	Marine Park (IUCN Category VI)	36
	Section 5(1)(h) Reserve (IUCN Category II)	109
Muiron Islands Marine Management Area	Marine Management Area (IUCN Category VI)	45
Jurabi Coastal Park	Section 5(1)(h) Reserve (IUCN Category II)	46
Cape Range National Park	National Park (IUCN Category II)	49
Muiron Islands Nature Reserve	Nature Reserve (IUCN Category 1a)	52

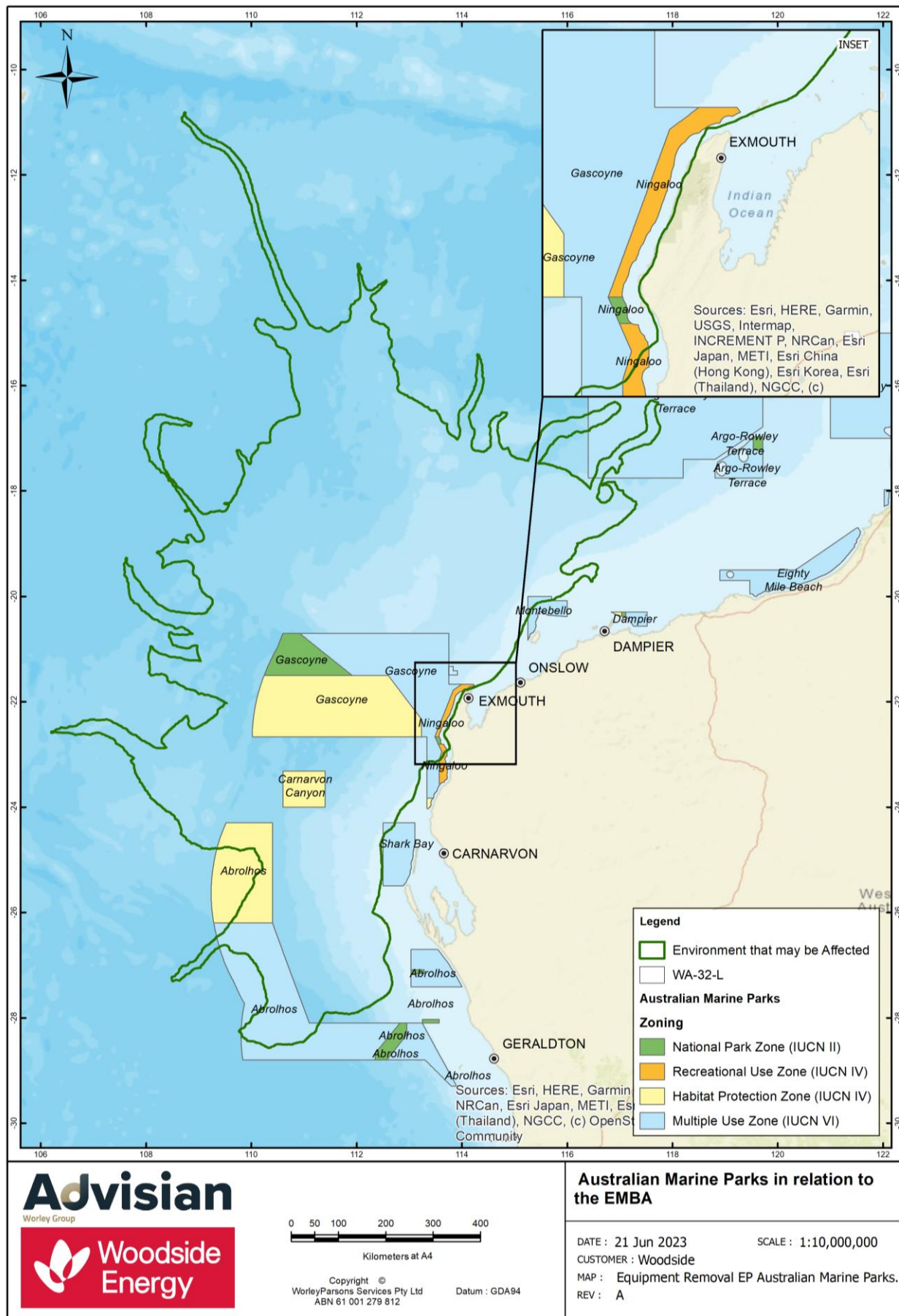


Figure 4-10: Australian Marine Parks in relation to the EMBA

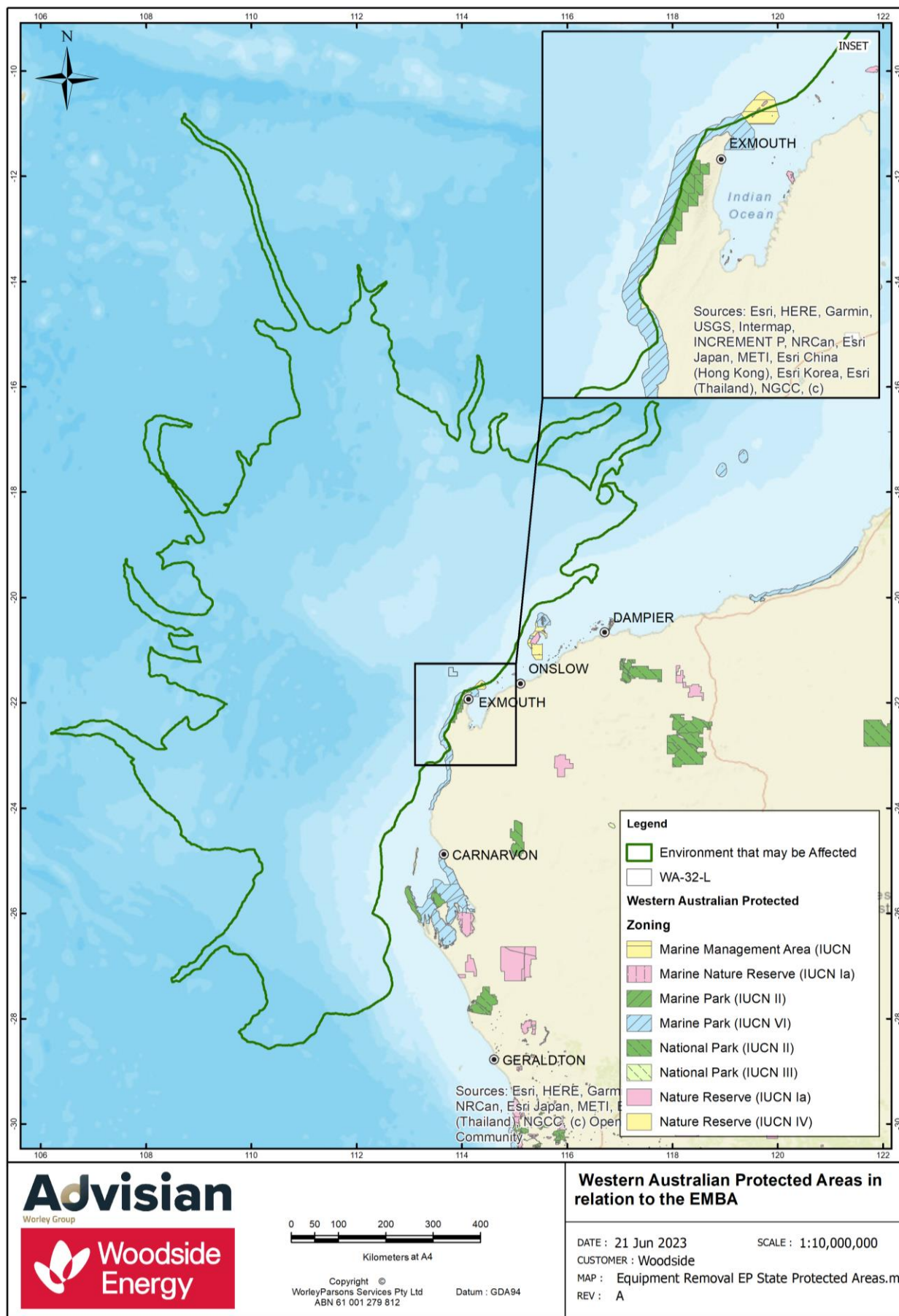


Figure 4-11: Western Australian protected areas in relation to the EMBA

4.6 Marine Fauna

4.6.1 Threatened and Migratory Species

Table 4-6 presents the threatened and migratory species within the operational area and the EMBA. These include all relevant MNES protected under the EPBC Act, as identified in the PMST search for the operational area and EMBA (PMST search results are provided in **Appendix C**). 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 operational area. Within the EMBA the PMST results identified 33 marine fauna species listed as 'threatened' species and 50 marine fauna species listed as 'migratory'.

Terrestrial species (such as terrestrial mammals, reptiles and bird species) that appear in the PMST results of the EMBA and do not have habitats along shorelines are not relevant to the petroleum activity impacts and risks and have therefore been excluded from **Table 4-6**.

A description of the identified threatened and migratory species is included in **Appendix C**.

Species with designated biologically important areas (BIAs) and Habitat Critical to their Survival (critical habitat) overlapping the EMBA and operational area have been identified in **Section 4.6.2**.

Table 4-6: Threatened and migratory species predicted to occur within the operational area and EMBA

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Fishes, Shark and Rays					
Narrow sawfish, knifetooth sawfish	<i>Anoxypristis cuspidata</i>	-	Migratory	-	Species or species habitat known to occur within area
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat likely to occur within area
Grey nurse shark (west coast population)	<i>Carcharias taurus</i> (west coast population)	Vulnerable	-	-	Species or species habitat known to occur within area
White shark, great white shark	<i>Carcharodon carcharias</i>	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Little gulper shark	<i>Centrophorus uyato</i>	Conservation Dependent (listed as <i>Centrophorus zeehaani</i>)	-	-	Species or species habitat likely to occur within area
Shortfin mako, mako shark	<i>Isurus oxyrinchus</i>	-	Migratory	Species or species habitat likely to occur within area	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	Species or species habitat likely to occur within area
Porbeagle, mackerel shark	<i>Lamna nasus</i>	-	Migratory	-	Species or species habitat may occur within area
Reef manta ray, coastal manta ray	<i>Mobula alfredi</i>	-	Migratory (as <i>Manta alfredi</i>)	-	Species or species habitat known to occur within area
Giant manta ray	<i>Mobula birostris</i>	-	Migratory (as <i>Manta birostris</i>)	Species or species habitat likely to occur within area	Species or species habitat known to occur within area
Dwarf sawfish, Queensland sawfish	<i>Pristis clavata</i>	Vulnerable	Migratory	-	Species or species habitat known to occur within area

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Freshwater sawfish, largetooth sawfish, river sawfish, Leichhardt's sawfish, northern sawfish	<i>Pristis pristis</i>	Vulnerable	Migratory	-	Species or species habitat likely to occur within area
Green sawfish, dindagubba, narrowsnout sawfish	<i>Pristis zijsron</i>	Vulnerable	Migratory	-	Species or species habitat known to occur within area
Whale shark	<i>Rhincodon typus</i>	Vulnerable	Migratory	-	Foraging, feeding or related behaviour known to occur within area
Scalloped hammerhead	<i>Sphyrna lewini</i>	Conservation Dependent	-	Species or species habitat may occur within area	Species or species habitat known to occur within area
Southern bluefin tuna	<i>Thunnus maccoyii</i>	Conservation Dependent	Migratory	Species or species habitat likely to occur within area	Breeding known 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	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	Foraging, feeding or related behaviour likely to occur within area
Bryde's whale	<i>Balaenoptera edeni</i>	-	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Blue whale	<i>Balaenoptera musculus</i>	Endangered	Migratory	Migration route known to occur within area	Migration route known to occur within area
Fin whale	<i>Balaenoptera physalus</i>	Vulnerable	Migratory	Species or species habitat likely to occur within area	Foraging, feeding or related behaviour likely to occur within area

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Dugong	<i>Dugong dugon</i>	-	Migratory	-	Breeding known to occur within area
Southern right whale	<i>Eubalaena australis</i>	Endangered	Migratory (as <i>Balaena glacialis australis</i>)	Species or species habitat may occur within area	Species or species habitat likely to occur within area
Humpback whale	<i>Megaptera novaeangliae</i>	-	Migratory	Species or species habitat likely to occur within area	Breeding known to occur within area
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	-	Migratory	-	Species or species habitat known to occur within area
Killer whale, orca	<i>Orcinus orca</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Sperm whale	<i>Physeter macrocephalus</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Australian humpback dolphin	<i>Sousa sahalensis</i>	-	Migratory (as <i>Sousa chinensis</i>)	-	Species or species habitat known to 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	Species or species habitat known to occur within area
Marine Reptiles					
Short-nosed seasnake	<i>Aipysurus apraefrontalis</i>	Critically Endangered	-	-	Species or species habitat known to occur within area
Leaf-scaled seasnake	<i>Aipysurus foliosquama</i>	Critically Endangered	-	-	Species or species habitat known to occur within area
Loggerhead turtle	<i>Caretta caretta</i>	Endangered	Migratory	Species or species habitat known to occur within area	Breeding known to occur within area

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Green turtle	<i>Chelonia mydas</i>	Vulnerable	Migratory	Species or species habitat known to occur within area	Breeding known to occur within area
Leatherback turtle, leathery turtle, luth	<i>Dermochelys coriacea</i>	Endangered	Migratory	Species or species habitat known to occur within area	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	Breeding known to occur within area
Olive ridley turtle, Pacific ridley turtle	<i>Lepidochelys olivacea</i>	Endangered	Migratory	-	Species or species habitat likely to occur within area
Flatback turtle	<i>Natator depressus</i>	Vulnerable	Migratory	Congregation or aggregation known to occur within area	Breeding known to occur within area
Seabirds and Shorebirds					
Common sandpiper	<i>Actitis hypoleucos</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Common noddy	<i>Anous stolidus</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat likely to occur within area
Australian lesser noddy	<i>Anous tenuirostris melanops</i>	Vulnerable	-	-	Species or species habitat may occur within area
Flesh-footed shearwater, fleshy-footed shearwater	<i>Ardenna carneipes</i>	-	Migratory	-	Foraging, feeding or related behaviour likely to occur within area
Wedge-tailed shearwater	<i>Ardenna pacifica</i>	-	Migratory	-	Breeding known to occur within area
Sharp-tailed sandpiper	<i>Calidris acuminata</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Red knot, knot	<i>Calidris canutus</i>	Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat likely to occur within area

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Curlew sandpiper	<i>Calidris ferruginea</i>	Critically Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Pectoral sandpiper	<i>Calidris melanotos</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Streaked shearwater	<i>Calonectris leucomelas</i>	-	Migratory	-	Species or species habitat likely to occur within area
Greater sand plover, large sand plover	<i>Charadrius leschenaultii</i>	Vulnerable	Migratory	-	Species or species habitat known to occur within area
Oriental plover, oriental dotterel	<i>Charadrius veredus</i>	-	Migratory	-	Species or species habitat may occur within area
Amsterdam albatross	<i>Diomedea amsterdamensis</i>	Endangered	Migratory	-	Species or species habitat likely to occur within area
Southern royal albatross	<i>Diomedea epomophora</i>	Vulnerable	Migratory	-	Species or species habitat may occur within area
Wandering albatross	<i>Diomedea exulans</i>	Vulnerable	Migratory	-	Species or species habitat may occur within area
Christmas Island frigatebird, Andrew's frigatebird	<i>Fregata andrewsi</i>	Endangered	Migratory	-	Foraging, feeding or related behaviour known to occur within area
Lesser frigatebird, least frigatebird	<i>Fregata ariel</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Great frigatebird, greater frigatebird	<i>Fregata minor</i>	-	Migratory	-	Species or species habitat may occur within area
Oriental pratincole	<i>Glareola maldivarum</i>	-	Migratory	-	Species or species habitat may occur within area

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Caspian tern	<i>Hydroprogne caspia</i>	-	Migratory	-	Breeding known to occur within area
Bar-tailed godwit	<i>Limosa lapponica</i>	-	Migratory	-	Species or species habitat known to occur within area
Northern Siberian bar-tailed godwit, russkoye bar-tailed godwit	<i>Limosa lapponica menzbieri</i>	Critically Endangered	-	-	Species or species habitat known to occur within area
Southern giant-petrel, southern giant petrel	<i>Macronectes giganteus</i>	Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Northern giant petrel	<i>Macronectes halli</i>	Vulnerable	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	Species or species habitat known to occur within area
Bridled tern	<i>Onychoprion anaethetus</i>	-	Migratory	-	Foraging, feeding or related behaviour likely to occur within area
Osprey	<i>Pandion haliaetus</i>	-	Migratory	-	Breeding known to occur within area
Abbott's booby	<i>Papasula abbotti</i>	Endangered	-	-	Species or species habitat may occur within area
White-tailed tropicbird	<i>Phaethon lepturus</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Christmas island white-tailed tropicbird, golden bosunbird	<i>Phaethon lepturus fulvus</i>	Endangered	-	Species or species habitat may occur within area	Species or species habitat may occur within area

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Soft-plumaged petrel	<i>Pterodroma mollis</i>	Vulnerable	-	Species or species habitat may occur within area	Foraging, feeding or related behaviour likely to occur within area
Australian painted snipe	<i>Rostratula australis</i>	Endangered	-	-	Species or species habitat likely to occur within area
Roseate tern	<i>Sterna dougallii</i>	-	Migratory	-	Breeding known to occur within area
Little tern	<i>Sternula albifrons</i>	-	Migratory	-	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	Breeding known to occur within area
Indian yellow-nosed albatross	<i>Thalassarche carteri</i>	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Shy albatross	<i>Thalassarche cauta</i>	Endangered	Migratory	-	Species or species habitat may occur within area
Campbell albatross, Campbell black-browed albatross	<i>Thalassarche impavida</i>	Vulnerable	Migratory	-	Species or species habitat may occur within area
Black-browed albatross	<i>Thalassarche melanophris</i>	Vulnerable	Migratory	-	Species or species habitat may occur within area
White-capped albatross	<i>Thalassarche steadi</i>	Vulnerable	Migratory	-	Species or species habitat may occur within area
Greater crested tern	<i>Thalasseus bergii</i>	-	Migratory	-	Breeding known to occur within area
Common greenshank, greenshank	<i>Tringa nebularia</i>	-	Migratory	-	Species or species habitat likely to occur within area

4.6.2 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 DCCEEW to aid in the management and protection of threatened fauna.

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.

Relevant BIA's and Critical Habitat areas identified within the operational area and EMBA are presented in **Table 4-7** and **Table 4-8** respectively.

Figure 4-12 to **Figure 4-19** show the spatial overlap with relevant BIAs and Critical Habitat areas and the operational area and EMBA.

Table 4-7: Biologically Important Areas within the operational area and EMBA

Value / Sensitivity	BIA Type	Closest Distance to Operational Area (km)
<i>Fish, Sharks and Rays</i>		
Whale shark	Foraging	25
<i>Marine Mammals</i>		
Humpback whale	Migration (north and south)	4
Pygmy blue whale	Migration	0 (overlaps Operational Area)
	Distribution	0 (overlaps Operational Area)
	Foraging	20
Dugong	Breeding	32
	Calving	32
	Foraging (high density seagrass beds)	32
	Nursing	32
<i>Marine Reptiles</i>		
Flatback turtle	Inter-nesting buffer	18
Loggerhead turtle	Inter-nesting buffer	19
	Nesting	39
Hawksbill turtle	Inter-nesting buffer	19
	Nesting	39
Green turtle	Inter-nesting buffer	34
	Nesting	51

Value / Sensitivity	BIA Type	Closest Distance to Operational Area (km)
<i>Seabirds and Shorebirds</i>		
Wedge-tailed shearwater	Breeding	0 (overlaps Operational Area)
	Foraging (in high numbers)	471
Fairy tern	Breeding	32
Roseate tern	Breeding	82
Lesser crested tern	Breeding	90
Bridled tern	Foraging (in high numbers)	471
Sooty tern	Foraging	493
White-faced storm petrel	Foraging (in high numbers)	641
Little shearwater	Foraging (in high numbers)	654

Table 4-8: Habitat critical for the survival of marine turtles within the operational area and EMBA

Value / Sensitivity	Habitat Critical Type	Closest Distance to Operational Area (km)
Flatback turtle	Nesting	19
Green turtle	Nesting	22
Loggerhead turtle	Nesting	22
Hawksbill turtle	Nesting	48

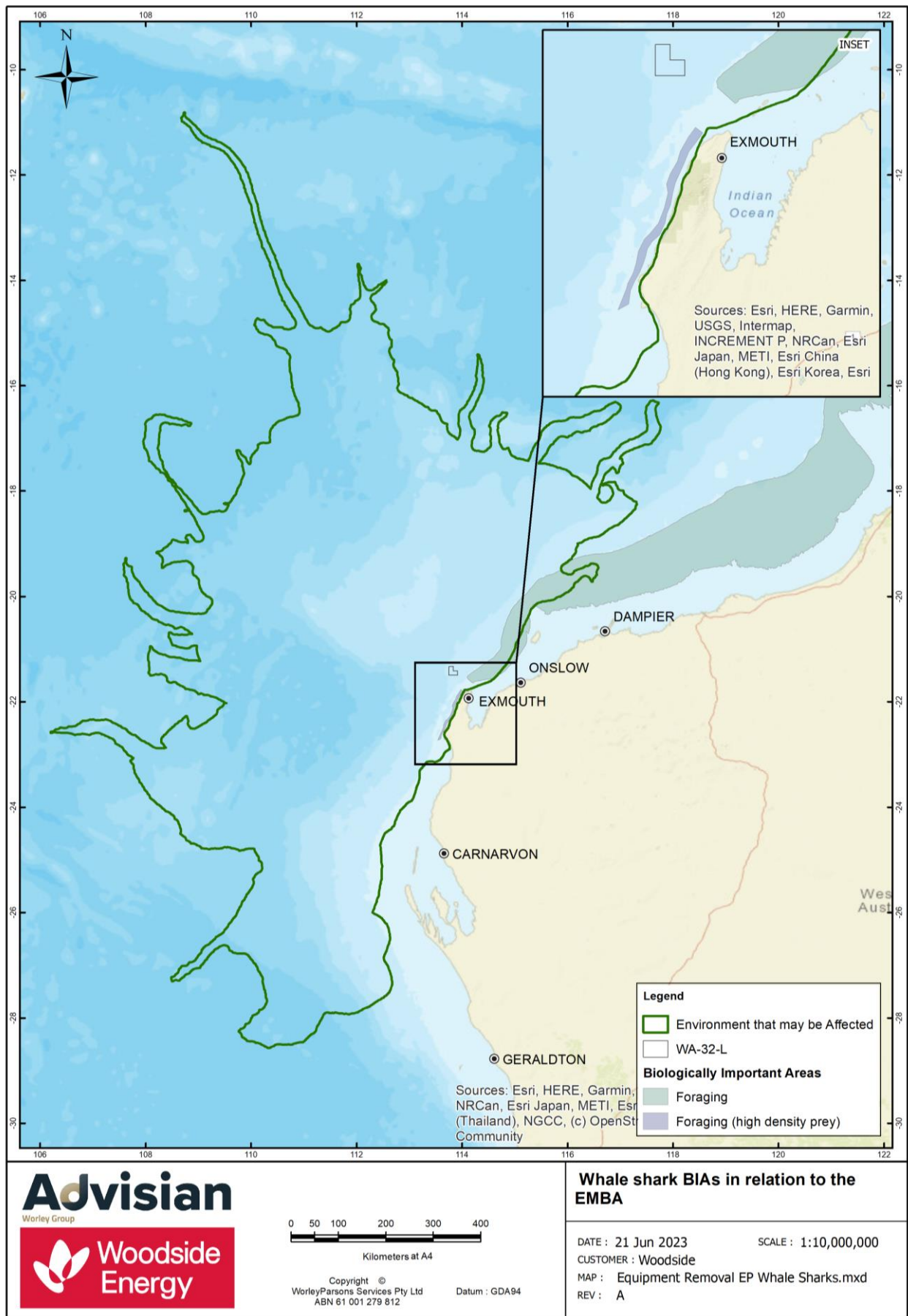


Figure 4-12: Whale shark BIAs in relation to the EMBA

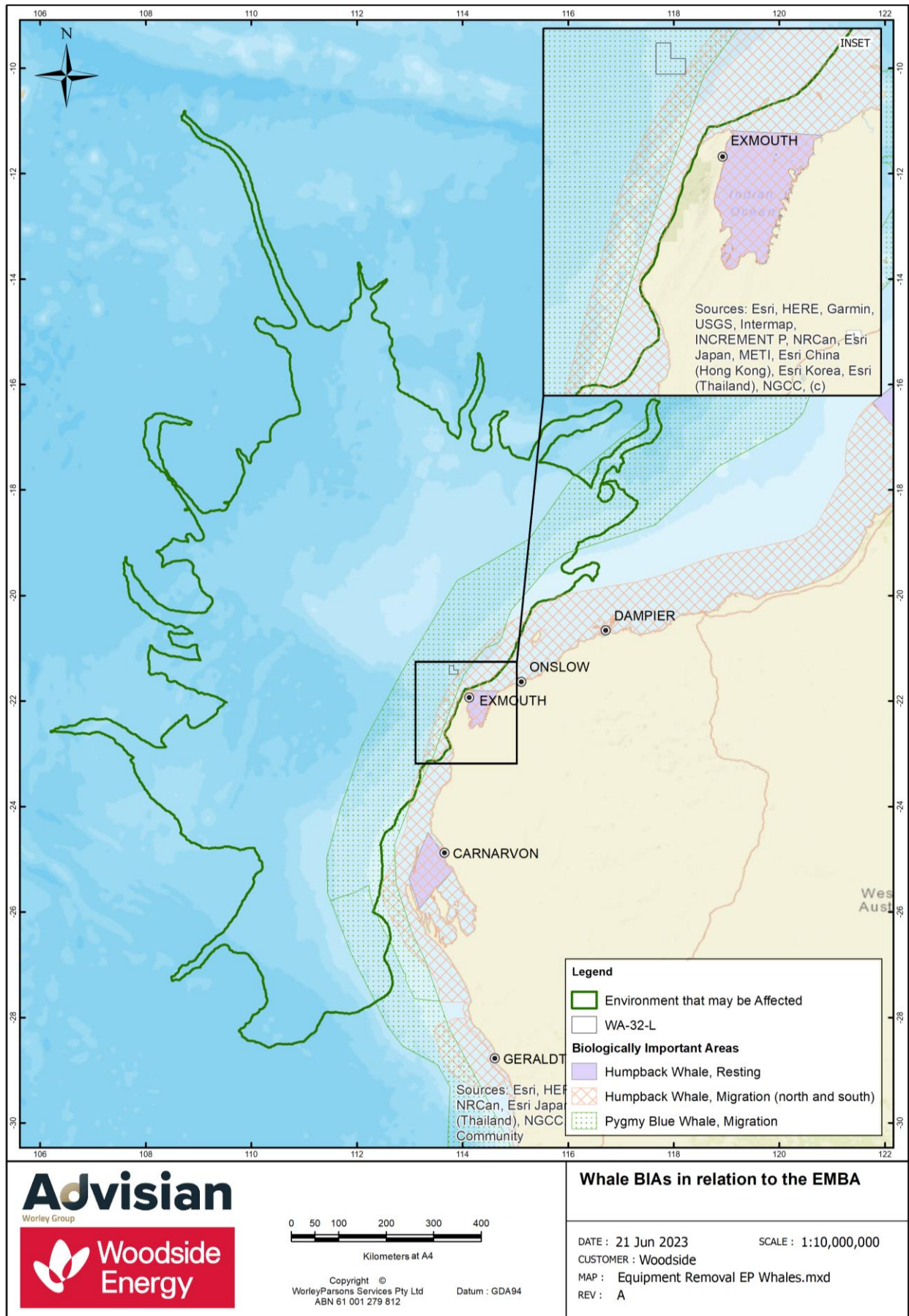


Figure 4-13: Whale BIAs in relation to the EMBA

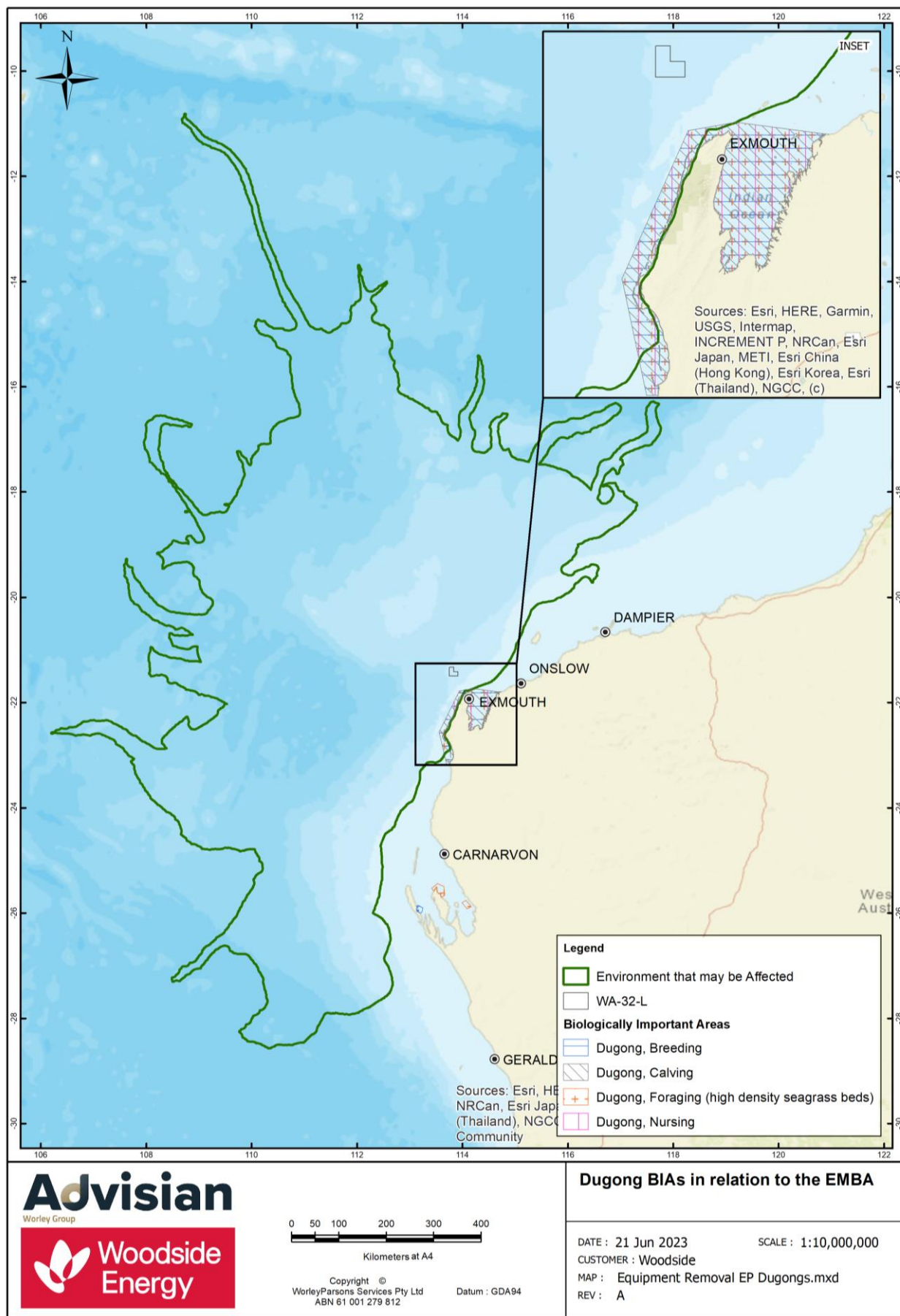


Figure 4-14: Dugong BIAs in relation to the EMBA

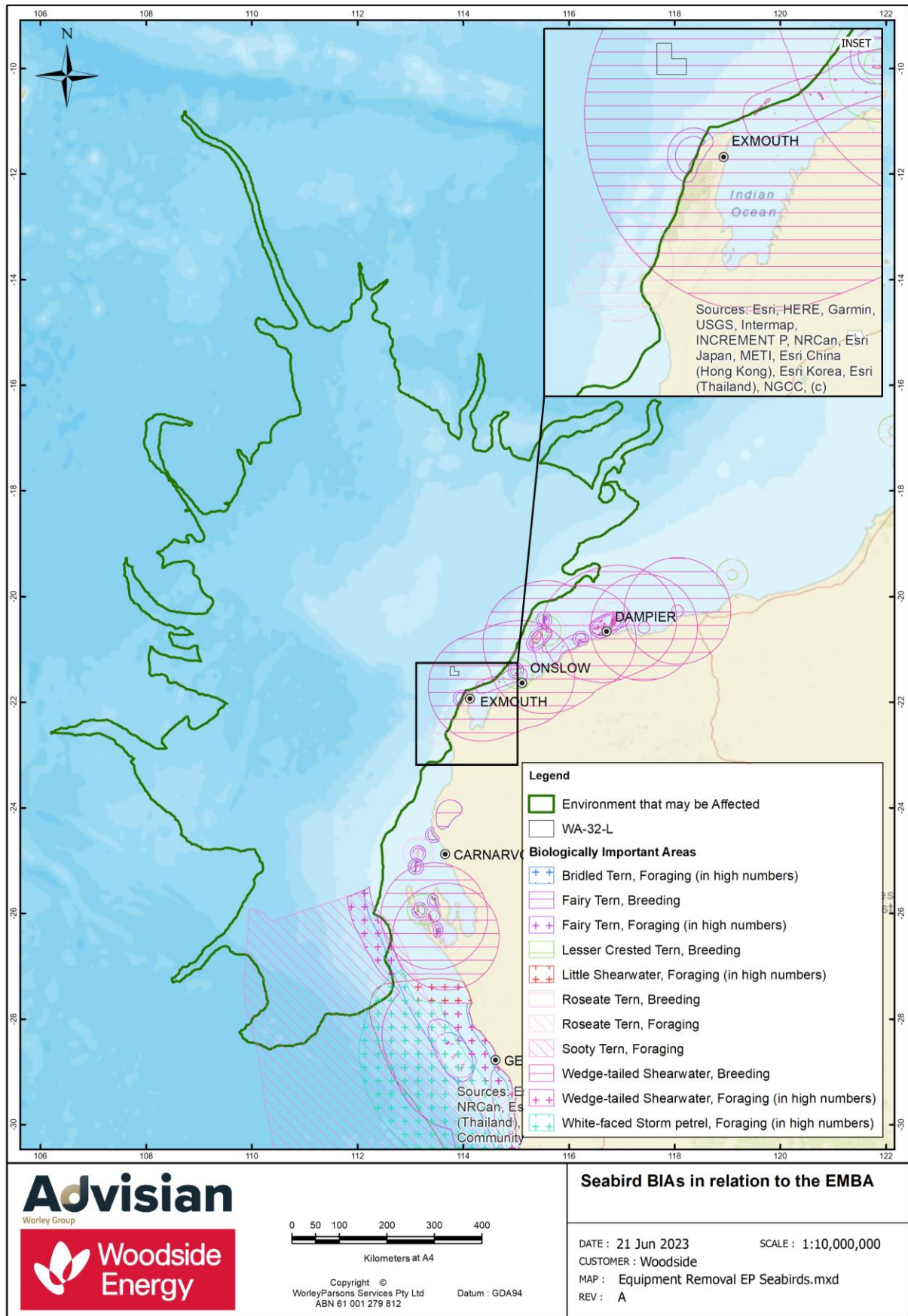


Figure 4-15: Seabird and migratory shorebird BIAs in relation to the EMBA

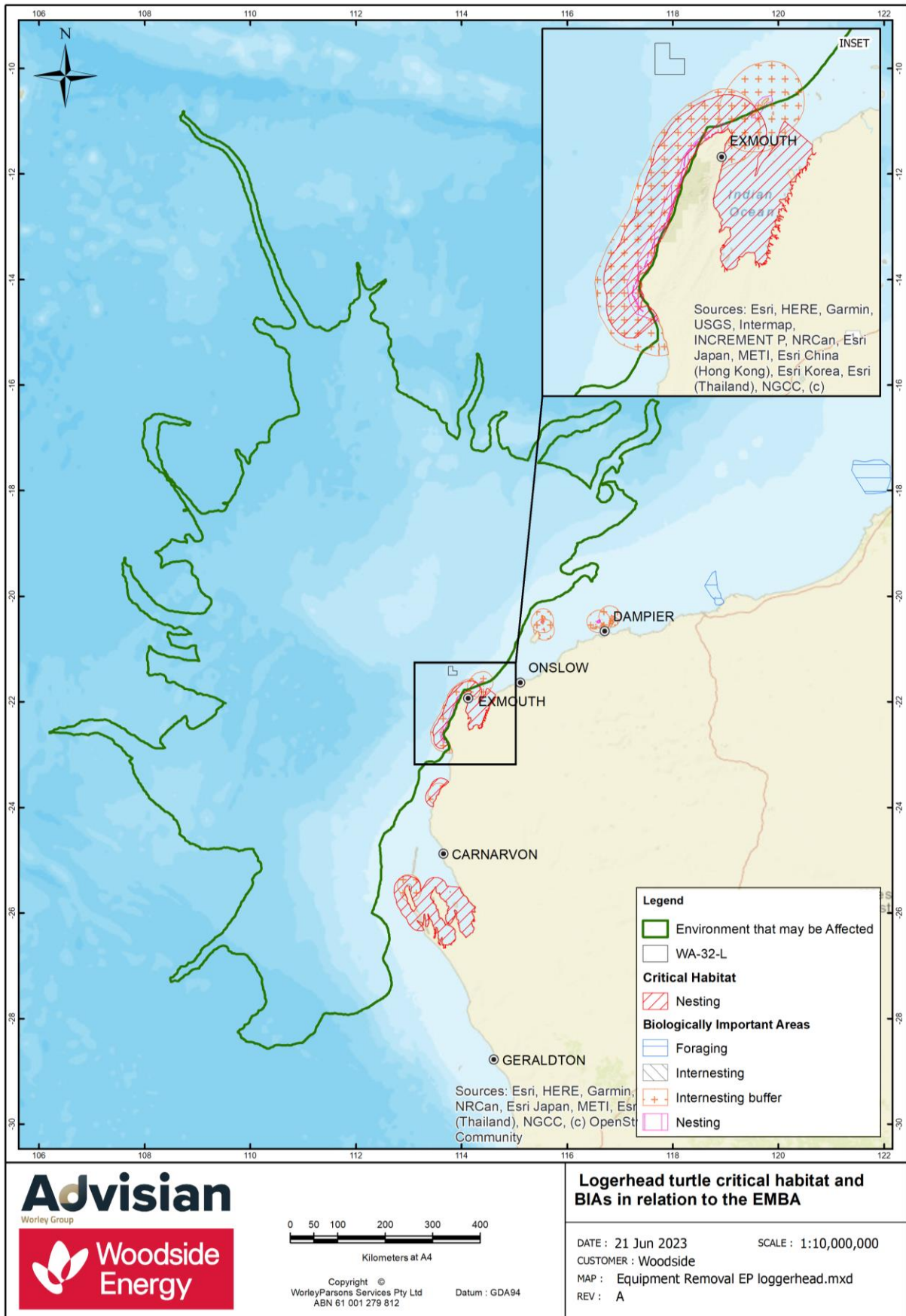


Figure 4-16: Loggerhead turtle critical habitat and BIAs in relation to the EMBA

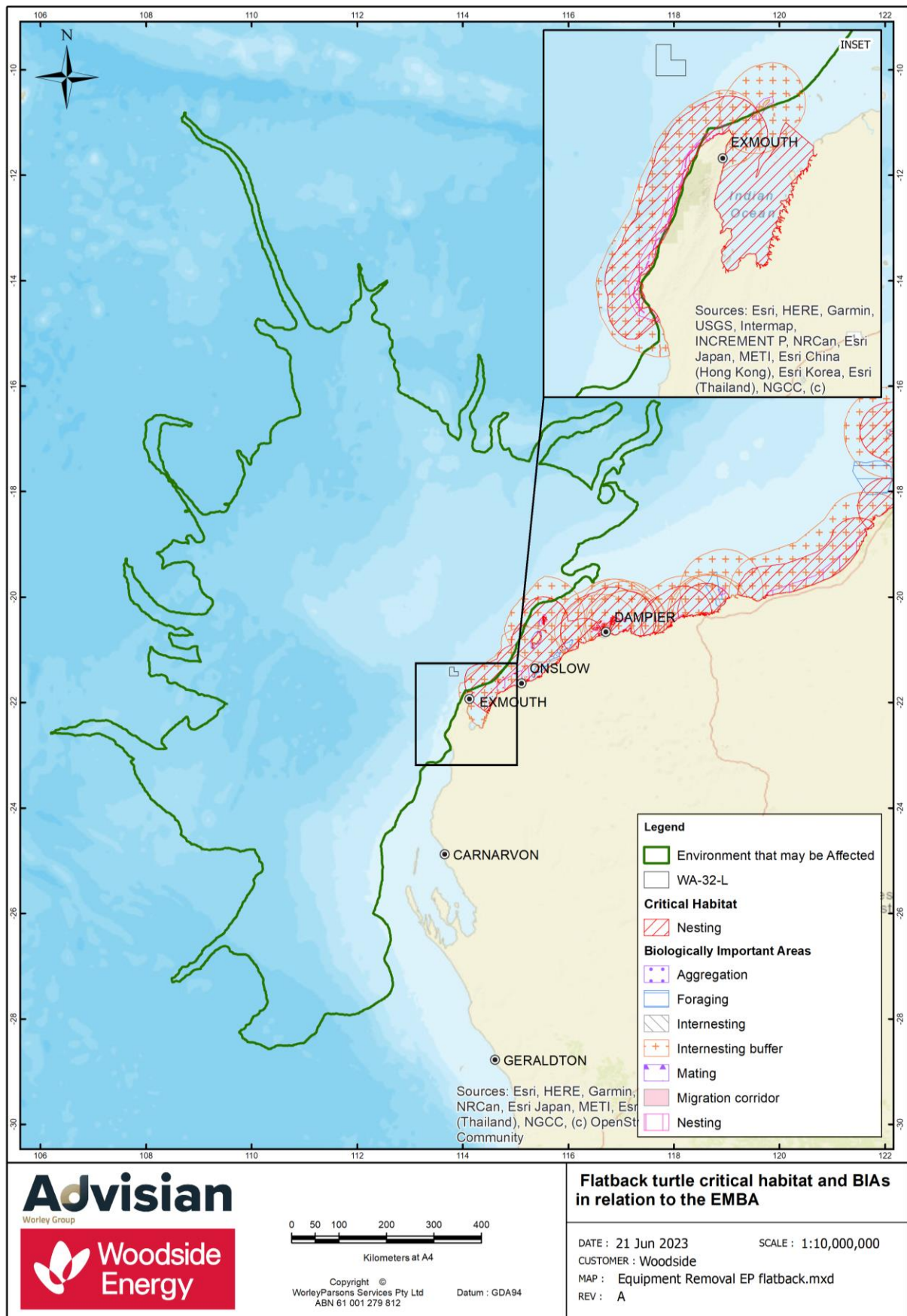


Figure 4-17: Flatback turtle critical habitat and BIAs in relation to the EMBA

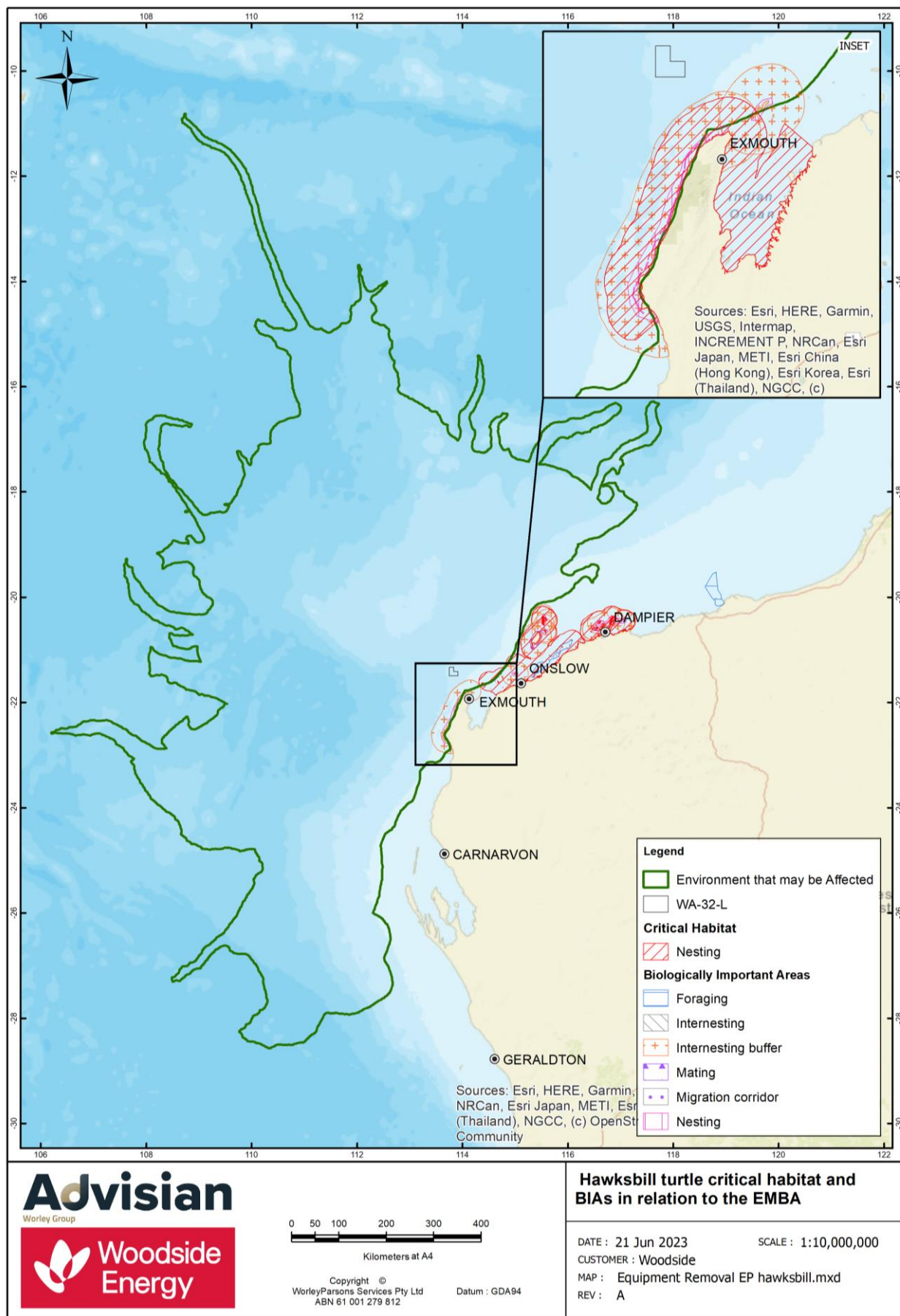


Figure 4-18: Hawksbill turtle critical habitat and BIAs in relation to the EMBA

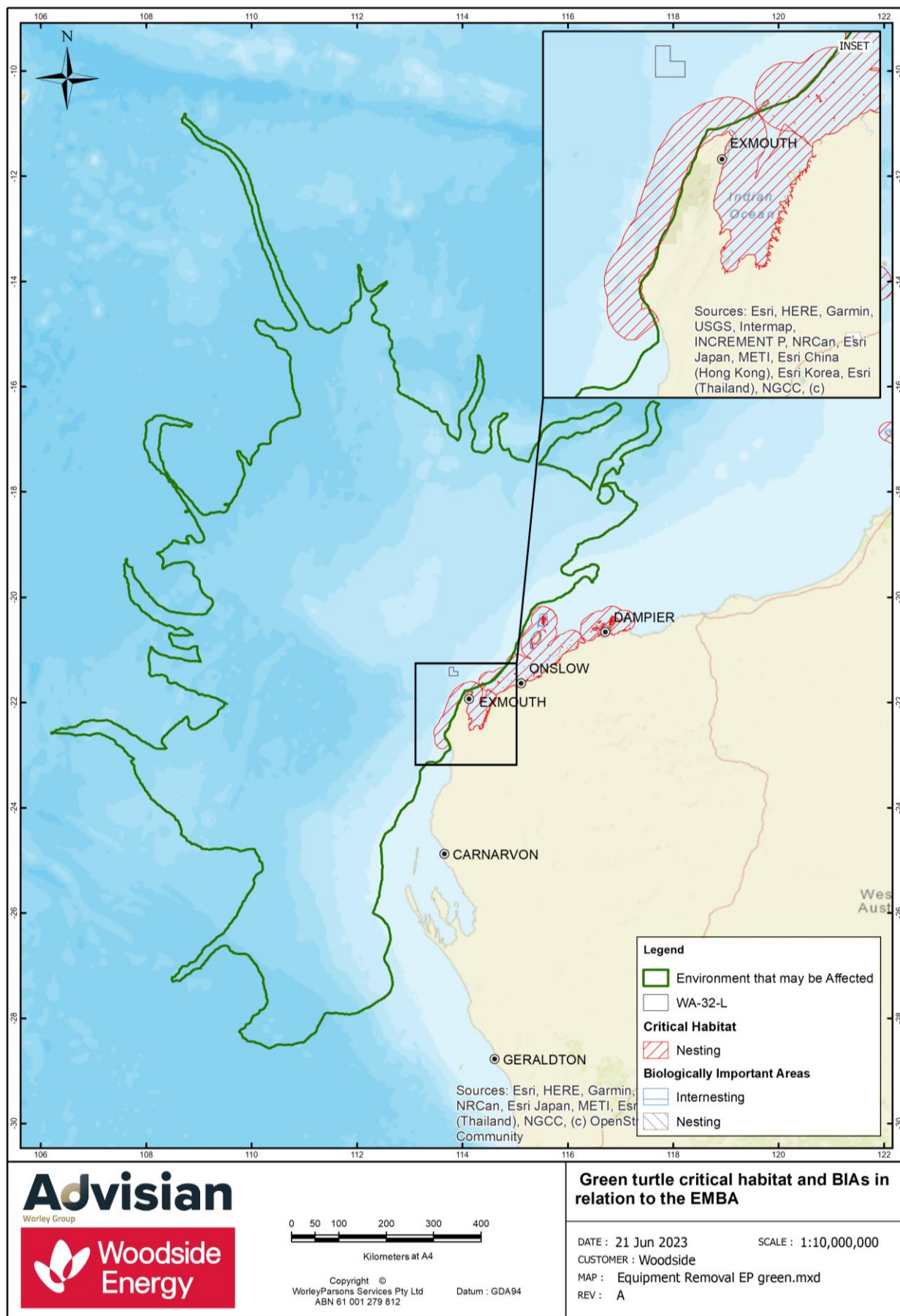


Figure 4-19: Green turtle critical habitat and BIAs in relation to the EMBA

4.6.3 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 4-9**).

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 any 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 4-9** provides information about the specific requirements of the relevant conservation advice, species recovery plans and threat abatement plans that applies to the petroleum activities, and demonstrates how current management requirements have been taken into account 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 4-9 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 4-9: 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)	Marine debris	Section 8.7
Fishes, Sharks and Rays			
Dwarf Sawfish, Queensland Sawfish	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015a)	Habitat degradation and modification	Section 8.2
	Approved conservation advice for <i>Pristis clavata</i> (dwarf sawfish) (Threatened Species Scientific Committee, 2009)		
White Shark, Great White Shark	Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (Department of Sustainability, Environment, Water, Population and Communities, 2013)	Ecosystem effects from habitat modification	Section 8.2
Whale Shark	Conservation Advice <i>Rhincodon typus</i> whale shark (Threatened Species Scientific Committee, 2015a)	Marine debris	Section 8.7
Grey Nurse Shark (west coast population)	Recovery plan for the grey nurse shark (<i>Carcharias taurus</i>) (Department of the Environment, 2014)	Ecosystem effects from habitat modification	Section 8.2
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015a)	Habitat degradation and modification	Section 8.2
	Approved conservation advice for <i>Pristis pristis</i> (largetooth sawfish) (Threatened Species Scientific Committee, 2014)		
Green Sawfish, Dindagubba, Narrowsnout Sawfish	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015a)	Habitat degradation and modification	Section 8.2
	Approved conservation advice for green sawfish (Threatened Species Scientific Committee, 2008a)		

Common Name	Recovery Plan / Conservation Advice / Management Plan	Threats identified that may Arise from the Petroleum Activity	Relevant EP Section
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, 2015b)	Noise interference	Section 7.3
		Vessel disturbance	Section 8.4
Sei Whale	Conservation Advice <i>Balaenoptera borealis</i> sei whale (Threatened Species Scientific Committee, 2015b)	Noise interference	Section 7.3
		Vessel disturbance	Section 8.4
Fin Whale	Conservation Advice <i>Balaenoptera physalus</i> fin whale (Threatened Species Scientific Committee, 2015c)	Noise interference	Section 7.3
		Vessel disturbance	Section 8.4
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 Sustainability, Environment, Water, Population and Communities, 2012)	Noise interference	Section 7.3
		Vessel disturbance	Section 8.4
Marine Reptiles			
Leaf-scaled Seasnake	Approved Conservation Advice for <i>Aipysurus foliosquama</i> (Leaf-scaled Sea Snake) (Threatened Species Scientific Committee, 2010a)	Marine debris	Section 8.7
		Habitat degradations	Section 8.2
Short-nosed Seasnake	Approved Conservation Advice for <i>Aipysurus apraefrontalis</i> (Short-nosed Sea Snake) (Threatened Species Scientific Committee, 2010b)	Marine debris	Section 8.7
		Habitat degradations	Section 8.2
Loggerhead Turtle	Recovery plan for marine turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	Light pollution	Section 7.2
		Noise interference	Section 7.3
		Oil pollution	Section 8.2
		Vessel disturbance	Section 8.4
		Marine debris	Section 8.7

Common Name	Recovery Plan / Conservation Advice / Management Plan	Threats identified that may Arise from the Petroleum Activity	Relevant EP Section
Leatherback Turtle, Leathery Turtle, Luth	Recovery plan for marine turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	Light pollution	Section 7.2
		Noise interference	Section 7.3
		Oil pollution	Section 8.2
		Vessel disturbance	Section 8.4
		Marine debris	Section 8.7
	Approved conservation advice for <i>Dermochelys coriacea</i> (Leatherback Turtle) (Threatened Species Scientific Committee, 2008b)	Vessel disturbance	Section 8.4
		Marine debris	Section 8.7
Hawksbill Turtle	Recovery plan for marine turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	Light pollution	Section 7.2
		Noise interference	Section 7.3
		Oil pollution	Section 8.2
		Vessel disturbance	Section 8.4
		Marine debris	Section 8.7
Green Turtle	Recovery plan for marine turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	Light pollution	Section 7.2
		Noise interference	Section 7.3
		Oil pollution	Section 8.2
		Vessel disturbance	Section 8.4
		Marine debris	Section 8.7
Flatback Turtle	Recovery plan for marine turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)	Light pollution	Section 7.2
		Noise interference	Section 7.3
		Oil pollution	Section 8.2

Common Name	Recovery Plan / Conservation Advice / Management Plan	Threats identified that may Arise from the Petroleum Activity	Relevant EP Section
		Vessel disturbance	Section 8.4
		Marine debris	Section 8.7
Seabirds and Migratory Shorebirds			
Eastern Curlew, Far Eastern Curlew	Conservation Advice <i>Numenius madagascariensis</i> eastern curlew (Threatened Species Scientific Committee, 2015d)	Habitat degradation / modification	Section 8.2
Curlew Sandpiper	Conservation Advice <i>Calidris ferruginea</i> curlew sandpiper (Threatened Species Scientific Committee, 2015e)	Habitat degradation / modification	Section 8.2
Abbott's Booby	Conservation advice for Abbott's Booby - <i>Papasula abbotti</i> (Threatened Species Scientific Committee, 2020a)	Marine pollution	Section 8.2 Section 8.7
Shy Albatross	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (Department of Sustainability, Environment, Water, Population and Communities, 2011)	Marine pollution	Section 8.2 Section 8.7
	Conservation advice <i>Thalassarche cauta</i> shy albatross (Threatened Species Scientific Committee, 2020b)	Marine pollution	Section 8.2 Section 8.7
Southern Giant-Petrel, Southern Giant Petrel	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (Department of Sustainability, Environment, Water, Population and Communities, 2011)	Marine pollution	Section 8.2 Section 8.7
Red Knot, Knot	Conservation advice <i>Calidris canutus</i> red knot (Threatened Species Scientific Committee, 2016)	Marine pollution	Section 8.2
Indian Yellow-nosed Albatross	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (Department of Sustainability, Environment, Water, Population and Communities, 2011)	Marine pollution	Section 8.2 Section 8.7
White-capped Albatross	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (Department of Sustainability, Environment, Water, Population and Communities, 2011)	Marine pollution	Section 8.2 Section 8.7

Common Name	Recovery Plan / Conservation Advice / Management Plan	Threats identified that may Arise from the Petroleum Activity	Relevant EP Section
Campbell Albatross, Campbell Black-browed Albatross	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (Department of Sustainability, Environment, Water, Population and Communities, 2011)	Marine pollution	Section 8.2 Section 8.7
Australian Fairy Tern	Conservation advice for <i>Sternula nereis nereis</i> (Fairy tern) (Threatened Species Scientific Committee, 2011)	Marine pollution	Section 8.2 Section 8.7
Black-browed Albatross	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (Department of Sustainability, Environment, Water, Population and Communities, 2011)	Marine pollution	Section 8.2 Section 8.7
Soft-plumaged Petrel	Conservation advice <i>Pterodroma mollis</i> soft-plumage petrel (Threatened Species Scientific Committee, 2015g)	No credible threats arising from petroleum activity	Not applicable

4.7 Socio-economic

Socio-economic activities that may occur within the operational area and EMBA include cultural heritage, commercial fishing, oil and gas exploration and production, and to a lesser extent, recreational fishing and tourism as summarised below.

More detailed descriptions of socio-economic considerations are provided in **Appendix C**.

4.7.1 Cultural Values and Heritage

4.7.1.1 Background

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

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

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

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

4.7.1.2 First Nations People

As a starting point for understanding social and cultural features of the environment for Indigenous (First Nations) groups, Woodside uses the existing systems, such as native title, to identify Indigenous groups that may have functions, interests or activities that may be affected. To that end, Woodside identifies native title representative bodies and nominated representative entities (defined in **Section 5.5.2.1**, as well as native title claimant applications (claims), native title determinations and Indigenous Land Use Agreements (ILUAs) which the EMBA overlaps. While acknowledging that cultural features and heritage values may exist outside of the native title framework, native title claims, determinations and ILUAs are defined under the *Native Title Act 1993* (Cth). Woodside considers this to be the broadest extent over which Indigenous groups have claimed native title rights and interests.

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

A requirement to establishing a positive determination of native title in court is proving that there is an organised society that occupied the land and/or waters at the time of British annexation 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 1993* 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 1993* 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 eight coastal ILUAs and four native title claims or determinations overlapping the EMBA (**Figure 4-20**).

4.7.1.3 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 any Operational Areas or EMBA is not necessarily a meaningful indicator of the connection of First Nations groups to the area and providing advice over such areas can be culturally dangerous. As a result, caution must be used when conducting broader engagement.

A summary of native title claims, determinations and ILUAs overlapping or coastally adjacent to the EMBA are set out in **Table 4-10**. Claims and determinations have not been differentiated in this table, as it is acknowledged that either of these may indicate the existence of rights and interests.

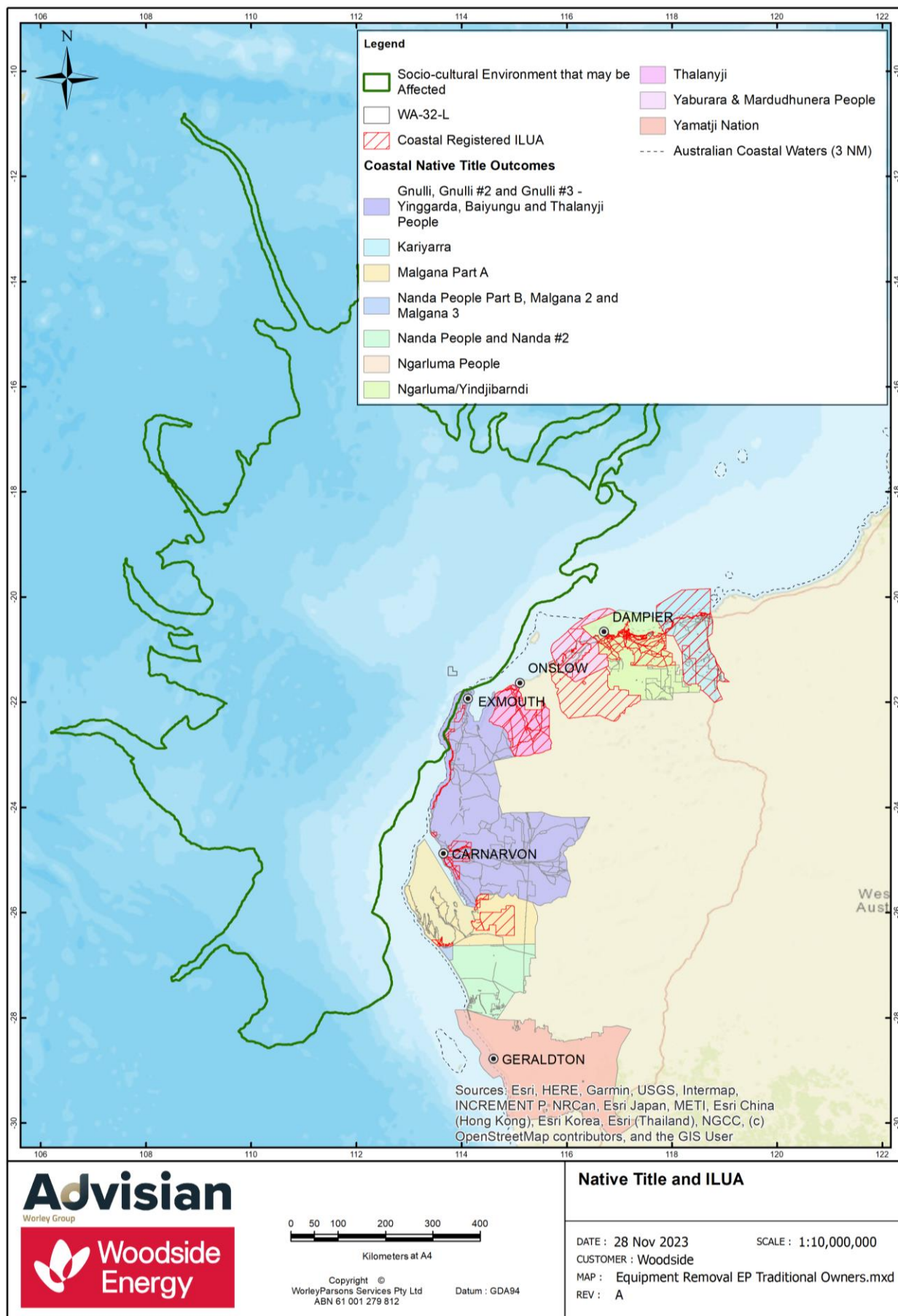


Figure 4-20: The operational area and Socio-economic EMBA in relation to native title claims and determinations

Table 4-10: 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	Overlapping with EMBA	Coastally Adjacent to the EMBA
Native Title Claim / Determination			
Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People	Nganhurra Thanardi Garrbu Aboriginal Corporation, Yinggarda Aboriginal Corporation	Yes	Yes
Kariyarra	Kariyarra Aboriginal Corporation	No	Yes
Malgana Part A	Malgana Aboriginal Corporation	No	Yes
Nanda People and Nanda #2	Nanda Aboriginal Corporation	No	Yes
Nanda People Part B, Malgana 2 and Malgana 3	Malgana Aboriginal Corporation, Nanda Aboriginal Corporation	No	Yes
Ngarluma People	Ngarluma Aboriginal Corporation	No	Yes
Ngarluma/Yindjibarndi	Ngarluma Aboriginal Corporation, Yindjibarndi Aboriginal Corporation	No	Yes
Thalanyji	Buurabalayji Thalanyji Aboriginal Corporation	No	Yes
Yaburara & Mardudhunera People	Wirrawandi Aboriginal Corporation	No	Yes
Yamatji Nation	Bundi Yamatji Aboriginal Corporation	No	Yes
ILUA			
Alinta-Kariyarra Electricity Infrastructure ILUA	Not specified	Yes	Yes
Anketell Port, Infrastructure Corridor and Industrial Estates Agreement	Ngarluma Aboriginal Corporation	Yes	Yes
Brickhouse and Yinggarda Aboriginal Corporation ILUA	Yinggarda Aboriginal Corporation	No	Yes
Cape Preston Project Deed (YM Mardie ILUA)	Wirrawandi Aboriginal Corporation	Yes	Yes
Cape Preston West Export Facility	Wirrawandi Aboriginal Corporation	No	Yes

Claim / Determination / ILUA	Registered Native Title Body Corporate	Overlapping with EMBA	Coastally Adjacent to the EMBA
FMG - Kariyarra Land Access ILUA	Not specified	Yes	Yes
Gnaraloo Indigenous Land Use Agreement	Nganhurra Thanardi Garrbu Aboriginal Corporation	No	Yes
Kariyarra and State ILUA	Kariyarra Aboriginal Corporation	No	Yes
KM & YM Indigenous Land Use Agreement 2018	Wirrawandi Aboriginal Corporation, Robe River Kuruma Aboriginal Corporation	Yes	Yes
Kuruma Marthudunera and Yaburara and Coastal Mardudhunera Indigenous Land Use Agreement	Not specified	Yes	Yes
Macedon ILUA	Buurabalayji Thalanyji Aboriginal Corporation	No	Yes
Malgana Tamala Pastoral Lease Agreement	Malgana Aboriginal Corporation	No	Yes
Malgana Woodleigh Carbla Pastoral Lease Agreement	Malgana Aboriginal Corporation	No	Yes
Malgana Wooramel Pastoral Lease Agreement	Malgana Aboriginal Corporation	No	Yes
Ningaloo Conservation Estate ILUA	Nganhurra Thanardi Garrbu Aboriginal Corporation	Yes	Yes
Quobba – Yinggarda Pastoral ILUA	Yinggarda Aboriginal Corporation	No	Yes
RTIO Kuruma Marthudunera People ILUA	Robe River Kuruma Aboriginal Corporation	No	Yes
RTIO Ngarluma Indigenous Land Use Agreement (Body Corporate Agreement)	Ngarluma Aboriginal Corporation	Yes	Yes

4.7.1.4 Marine Parks

Woodside acknowledges that Commonwealth and State Marine Park Management Plans have sought to recognise cultural values of First Nations groups. Australian Marine Parks (AMP) describe this framework in the following way: 'when making decisions about what can occur in marine parks and what action we will take to protect marine parks, we take values into account' (Parks Australia, n.d.). AMP summarises these values as natural values, cultural values, heritage values and socio-economic values. Woodside is triggered to undertake an assessment of cultural values within Marine Park Management Plans where the operational area or EMBA overlaps an AMP. Woodside considers the management plans of marine parks that overlap the Operational Area and the EMBA to determine whether cultural features and heritage values have been identified and whether there are specified representative bodies referenced to contact regarding potential cultural features and heritage values.

The Operational Area does not overlap and AMPs or State Marine Parks. The EMBA overlaps features of seven AMPs under the South-West Marine Parks Network Management Plan 2018 and North-West Marine Parks Network Management Plan 2018 and five State protected areas (**Section 4.5.5**). Where these plans specify identifiable representative bodies who may hold knowledge of heritage values or cultural features—including but not limited to Registered Native Title Bodies Corporate—these bodies are consulted (**Appendix F**). Consultation with these groups may identify heritage values and cultural features beyond those addressed in the marine park management plans. Two identifiable representative bodies were specified for the marine parks overlapped by the EMBA (**Table 4-11**).

The marine park management plans did note for the Abrolhos, Gascoyne, Montebello, Ningaloo and Shark Bay AMPs that the Yamatji Marlpa Aboriginal Corporation (YMAC) is the relevant Native Title Representative Body (DNP 2018a). Consultation with YMAC included discussion of the Traditional Custodians who may hold knowledge of heritage values or cultural features (**Appendix F**).

Table 4-11: Summary of Traditional Owner and Native Title Representative Bodies identified in management plans for Commonwealth and State Marine Parks overlapping the EMBA

Marine Park Management Plan	Operational Area Overlap	EMBA Overlap	Specific Bodies
<i>Commonwealth Marine Parks</i>			
Gascoyne	No	Yes	No identifiable body specified
Ningaloo	No	Yes	No identifiable body specified
Montebello	No	Yes	No identifiable body specified
Carnarvon Canyon	No	Yes	No identifiable body specified
Shark Bay	No	Yes	No identifiable body specified
Argo-Rowley Terrace	No	Yes	No identifiable body specified
Abrolhos	No	Yes	No identifiable body specified
<i>State Marine Parks</i>			
Ningaloo Marine Park	No	Yes	NTGAC
Muiron Islands Marine Management Area	No	Yes	No identifiable body specified
Jurabi Coastal Park	No	Yes	No identifiable body specified
Muiron Islands Nature Reserve	No	Yes	No identifiable body specified
Cape Range National Park	No	Yes	No identifiable body specified

The South-West Marine Parks Network Management Plan 2018 (DNP 2018b) also notes that cultural features of the Abrolhos AMP include strong stories that connect ocean and land. No impact pathway that may disrupt the preservation of stories or other intangible heritage from this Petroleum Activities Program has been identified. The plan also references artefacts located outside of the AMP and the EMBA on islands in State waters.

Both management plans for the AMPs note shipwrecks within the AMPs and overlap with World, National and Commonwealth heritage lists. These are addressed in **Section 4.7.1.9** below.

The Management Plan for the Ningaloo Marine Park and Muiron Islands Marine Management Area 2005 – 2015: Management Plan Number 52 (relating to the Muiron Islands Marine Management Area and Ningaloo Marine Park) notes the aesthetic values of the seascape as a cultural value and that “Panoramic vistas of turquoise lagoon waters, reefs, beaches, breaking surf and the blue open ocean beyond the reef line are major attractions of the reserves” (DBCA 2015). In particular, the plan notes that “Inappropriate structures along the coastline, on the

islands and in the surrounding waters have the potential to degrade the aesthetic values of the reserves. Coastal developments and maritime infrastructure projects must therefore be planned with careful consideration of this issue.” (DBCA 2015). As the activity described in this EP does not include the addition of any structures and removes existing infrastructure, no impacts on the aesthetic values of these parks are anticipated.

A number of management plans for the State marine parks also note Indigenous and maritime heritage within the marine parks. These are addressed in **Sections 4.7.1.5** and **4.7.1.7** below.

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 5**. The scope of advice Traditional Custodians were encouraged to provide through project consultation was not limited by reference to any particular boundaries or limits of sea country.

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 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 a further description of turtles and whale distribution and whale migration patterns, see Section 4.6.

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 Sections 7 and 8.

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

4.7.1.5 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, University of Western Australia (UWA), 2021). Woodside also understands that, at its lowest level during Indigenous occupation, sea level was between 125 m (O’Leary et al 2020, Veth et al 2019, Williams et al 2018) and 130 m below current levels (Benjamin et al 2020, Benjamin et al 2023, UWA 2021). Archaeological material preserved on the Ancient

Landscape has the potential to provide further information about the earliest periods of human occupation (Veth et al., 2019, UWA, 2021).

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

In recognition of this, Woodside considers the Ancient Landscape between the mainland and the Ancient Coastline KEF (**Figure 4-9**) as an area where potential Indigenous archaeological material may exist on the seabed, as this covers the full extent of this possible Indigenous occupation. The Operational Area does not overlap the Ancient Landscape. There is overlap of the EMBA with the Ancient Landscape but no potential for seabed disturbance from planned activities in this area and therefore no potential for impacts to archaeological material.

Known Indigenous heritage places including archaeological sites may be protected subject to declarations under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, *Underwater Cultural Heritage Act 2018* or *EPBC Act 1999*. However, these Acts only extend protection to indigenous 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 areas subject to declarations or prescriptions under these Acts are located within the EMBA.

For this EP, a search of Department of Planning, Lands and Heritage Aboriginal Cultural Heritage Inquiry System was undertaken, which showed no Registered Aboriginal Sites or Other Heritage Places in the Operational Area but did identify 43 sites in the EMBA (**Appendix I**).

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

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 (See **Appendix F**, Table 1).

During consultation, BTAC advised it has a cultural obligation to care for the environmental values of sea country (See Appendix F). In the course of consultation specific to another Woodside EP, BTAC raised the importance of archaeological sites on nearshore islands. Given the EMBA for this activity extends to nearshore areas coastally adjacent to BTAC native title lands, these values may be relevant in the event of an unplanned hydrocarbon spill. BTAC has not provided further detail regarding heritage value of places or cultural features of the Operational Area or the EMBA.

Malgana Aboriginal Corporation noted the ecological importance of Shark Bay, including stromatolites and seagrass beds (See **Appendix F**), which Woodside understands may therefore include cultural values. Shark Bay is outside of the EMBA. Nanda Aboriginal Corporation indicated that the shoreline holds particular cultural significance, however shorelines within or adjacent to Nanda Native Title claims or determinations are outside the EMBA.

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
- mythic snakes
- energy lines (unspecified)
- songlines and dreaming (unspecified)
- where saltwater and freshwater meet.

4.7.1.6 Intangible Cultural Features

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).

4.7.1.7 Historic Sites of Significance

There are no known sites of historic heritage of significance within the Operational Area. **Appendix I** describes cultural heritage sites within the EMBA.

4.7.1.8 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 of sites within the Operational Area but does include approximately 77 sites within the EMBA. The closest Underwater Cultural Heritage sites are the wrecks of the *Gem* and the *Beatrice*, both of which were wrecked near North West Cape, with the recorded wreck locations approximately 19 km from the Operational Area.

4.7.1.9 World, National and Commonwealth Heritage Listed Places

No listed World, National and Commonwealth heritage places overlap the Operational Area. The EMBA intercepts the boundary of one World Heritage Property, two National Heritage Properties and one Commonwealth Heritage Property (refer **Appendix C**):

- the Ningaloo Coast (World and National Heritage, approximately 24 km from the operational area)
- HMAS Sydney II and HSK Kormoran Shipwreck Sites (National Heritage, approximately 581 km from the operational area)

- Ningaloo Marine Area - Commonwealth Waters (Commonwealth Heritage, approximately 24 km from the operational area).

4.7.2 Commercial Fisheries

A number of Commonwealth and State fishery management areas are located within the operational area and EMBA. **Table 4-12** identifies the Commonwealth and State commercial fisheries overlapping the operational area and EMBA and provides an assessment of the potential interaction based on the nature of the fishery and historic DPIRD catch data.

Table 4-12: Commonwealth and state managed fisheries within the operational area and EMBA

Fishery Name	Operational Area	EMBA	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 2019–20 season was 31 t in total. 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 south-west Western Australia, with occasional activity off South Australia. Whilst there is an overlap with 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 there is an overlap with 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 since 2008–09. Whilst the operational area and EMBA overlaps with the fishery management area, there is no potential for interaction given the current distribution of fishing effort.
North West Slope Fishery	✗	✓	No	The North West Slope Trawl Fishery operates off north-western Australia, roughly between the 200 m isobath and the outer boundary of the Australian Fishing Zone. The fishery is beyond the operational area. The North West Slope Trawl Fishery has predominantly been a scampi fishery using demersal trawl gear. In 2020 there were six active fishing vessels.
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 operational area too deep to support the target species and the fishery is not active in the operational area. There have been no landings from within the operational area for this fishery in the last 10 years.
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

Fishery Name	Operational Area	EMBA	Potential Interaction?	Description ¹
				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 operational area, although it is expected to occur within the EMBA.
West Coast Deep Sea Crustacean	✓	✓	Yes	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 operational area are not conducive for this fishery and there are no landings in the last 10 years within the operational area, but it may operate within the EMBA.
Mackerel Fishery	✓	✓	Yes	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 known fishing effort. There have been no landings from within the operational area for this fishery in the last 10 years, but the fishery may operate within the EMBA.
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 operational area are not conducive for this fishery. There have been no landings from within the operational area for this fishery in the last 10 years, but the fishery may operate within the EMBA.
South West Coast Salmon	✓	✓	No	The commercial salmon fishery use beach seine net to catch fish. There are two commercial salmon fisheries operating in Western Australia they include, 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. There have been no landings from within the operational area for this fishery in the last 10 years and it very unlikely to operate within the EMBA.
Abalone	✗	✓	No	The Western Australian abalone fishery includes all coastal waters from the Western Australian and South Australian border to the Western Australian and Northern Territory

Fishery Name	Operational Area	EMBA	Potential Interaction?	Description ¹
				border. The fishery is concentrated on the south coast (greenlip and brownlip abalone) and the west coast (Roe's abalone). Abalone are harvested by divers, limiting the fishery to shallow waters (typically < 30 m). The target species are restricted to temperate waters and are unlikely to occur in the Gascoyne or Pilbara. There have been no landings from within the operational area for this fishery in the last 10 years and it very unlikely to operate within the EMBA.
Specimen Shell	x	✓	No	The Specimen Shell Managed Fishery can be conducted anywhere within Western Australia waters and targets the collection of specimen shells for display, collection, cataloguing and sale. The Specimen Shell Managed Fishery encompasses the entire WA coastline but effort is concentrated in areas adjacent to the largest population centres such as: Broome, Karratha, Shark Bay, Mandurah, Exmouth, Capes area, Albany and Perth. The fishery does not overlap the operational area, but fishing may occur within the EMBA.
Pilbara Fish Trawl	x	✓	No	The Pilbara Trawl Managed Fishery is divided into two zones and waters inside of the 50 m isobath are permanently closed to fish trawling. Trawling generally occurs in waters between 50-100 m deep. The fishery does not overlap the operational area, but fishing may occur within the EMBA.
Pilbara Trap	x	✓	No	The Pilbara Trap Managed Fishery covers the area from Exmouth northwards and eastwards to the 120° line of longitude, and offshore as far as the 200 m isobath. The fishery targets high value species such as <i>Lutjanus sebae</i> (red emperor) and <i>Pristipomoides multidens</i> (goldband snapper). The fishery does not overlap the operational area, but fishing may occur within the EMBA.
West Coast Rock Lobster	x	✓	No	The West Coast Rock Lobster Managed Fishery targets the western rock lobster (<i>Panulirus cygnus</i>), on the west coast of Western Australia between Shark Bay and Cape Leeuwin. The majority of the West Coast Rock Lobster populations use algal covered limestone reefs as their habitat to a depth of 150 m. The fishery does not overlap the operational area, but fishing may occur within the EMBA.
Pearl Oyster	x	✓	No	The Western Australian Pearl Oyster Fishery is the only remaining significant wild-stock fishery for pearl oysters in the world. Pearl oysters (<i>Pinctada maxima</i>) are collected by divers in shallow coastal waters (< 30 m) along the North West Shelf and Kimberley, which are mainly for use in the culture of pearls. The fishery does not overlap the operational area, but fishing may occur within the EMBA.

Fishery Name	Operational Area	EMBA	Potential Interaction?	Description ¹
Onslow Prawn	x	✓	No	The Onslow Prawn Managed Fishery encompasses a portion of the continental shelf off the Pilbara. The fishery targets a range of penaeids (primarily king prawns) which typically inhabit soft sediments < 45 m water depth. Fishing is carried out using trawl gear over unconsolidated sediments (sand and mud). The fishery does not overlap the operational area, but fishing may occur within the EMBA.
Gascoyne Demersal Scalefish	x	✓	No	The Gascoyne Demersal Scalefish Resource includes 60+ demersal species inhabiting marine waters deeper than 20 m in the Gascoyne Coast Bioregion. Commercial vessels in the fishery fish with mechanised handlines and target pink snapper (<i>Chrysophrys auratus</i>) and goldband snapper (<i>Pristipomoides multidens</i>). The fishery does not overlap the operational area, but fishing may occur within the EMBA.
Shark Bay Scallop	x	✓	No	The Shark Bay Scallop Managed Fishery is currently in a recovery phase resulting from the marine heat wave in 2010/11. The stock has fully recovered in Denham Sound but is recovering more slowly in northern Shark Bay. The fishery does not overlap the operational area, but fishing may occur within the EMBA.
Shark Bay Prawn	x	✓	No	The Shark Bay Prawn Managed Fishery uses low opening, otter prawn trawl systems within inner Shark Bay to target western king prawns (<i>Penaeus latisulcatus</i>), brown tiger prawns (<i>Penaeus esculentus</i>) and lesser quantities of endeavour (<i>Metapenaeus endeavouri</i>) and coral prawns (<i>Metapenaeopsis</i> sp.). The fishery does not overlap the operational area, but fishing may occur within the EMBA.

¹ Fisheries descriptions derived from *Fishery Status Reports 2021* (Patterson et al., 2021) and *Status Report of the Fisheries and Aquatic Resources of Western Australia 2018/2019 - State of the Fisheries* (Gaughan and Santoro, 2020) unless cited otherwise.

4.7.3 Traditional Fisheries

There are not expected to be any traditional fisheries that operate within the operational area. Traditional fisheries are typically restricted to coastal waters and/or areas with suitable fishing structures such as reefs, therefore it is possible traditional fisheries may utilise the coastal waters of the EMBA. **Appendix C** provides further information on traditional fisheries.

4.7.4 Tourism and Recreation

While relatively close to the Ningaloo Coast, which supports extensive nature-based tourism, the operational area 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 operational area and distance from shore, significant recreational fishing and tourism are not expected. **Appendix C** provides detail on recreational fishing and tourism within the EMBA.

4.7.5 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 (APPEA), 2014).

Oil and gas production facilities close to the operational area include:

- Woodside's Ngujima-Yin FPSO (approximately 16 km east of the operational area)
- Santos' Ningaloo Vision FPSO (approximately 19 km east of the operational area), and
- Woodside's Pyrenees Venture FPSO (approximately 21 km east-south-east of the operational area).

The Laverda field within title WA-59-L, directly to the south of WA-32-L, is produced back to the Ngujima-Yin FPSO. The subsea equipment associated with the Laverda production is approximately 1 km from the operational area at the closest point.

4.7.6 Commercial Shipping

The operational area hosts very low levels of commercial shipping. A fairway designed by AMSA lies to the west and north of the operational area, approximately 21 km from the operational area at the closest point. Commercial shipping is concentrated within this fairway (**Figure 4-21**). The production facilities to the east of the operational area will intermittently host tankers for offtakes, however all these facilities lie well beyond the operational area.

4.7.7 Defence

No defence areas or infrastructure intersects the operational area. Military exercise areas are located at Exmouth associated with Royal Australian Air Force Base Learmonth, approximately 76 km south of the operational area approximately 76 km south of the operational area. The operational area 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 (**Figure 4-22**). When activated by a Notice to Airmen (NOTAM), the restricted airspace can operate down to sea level.

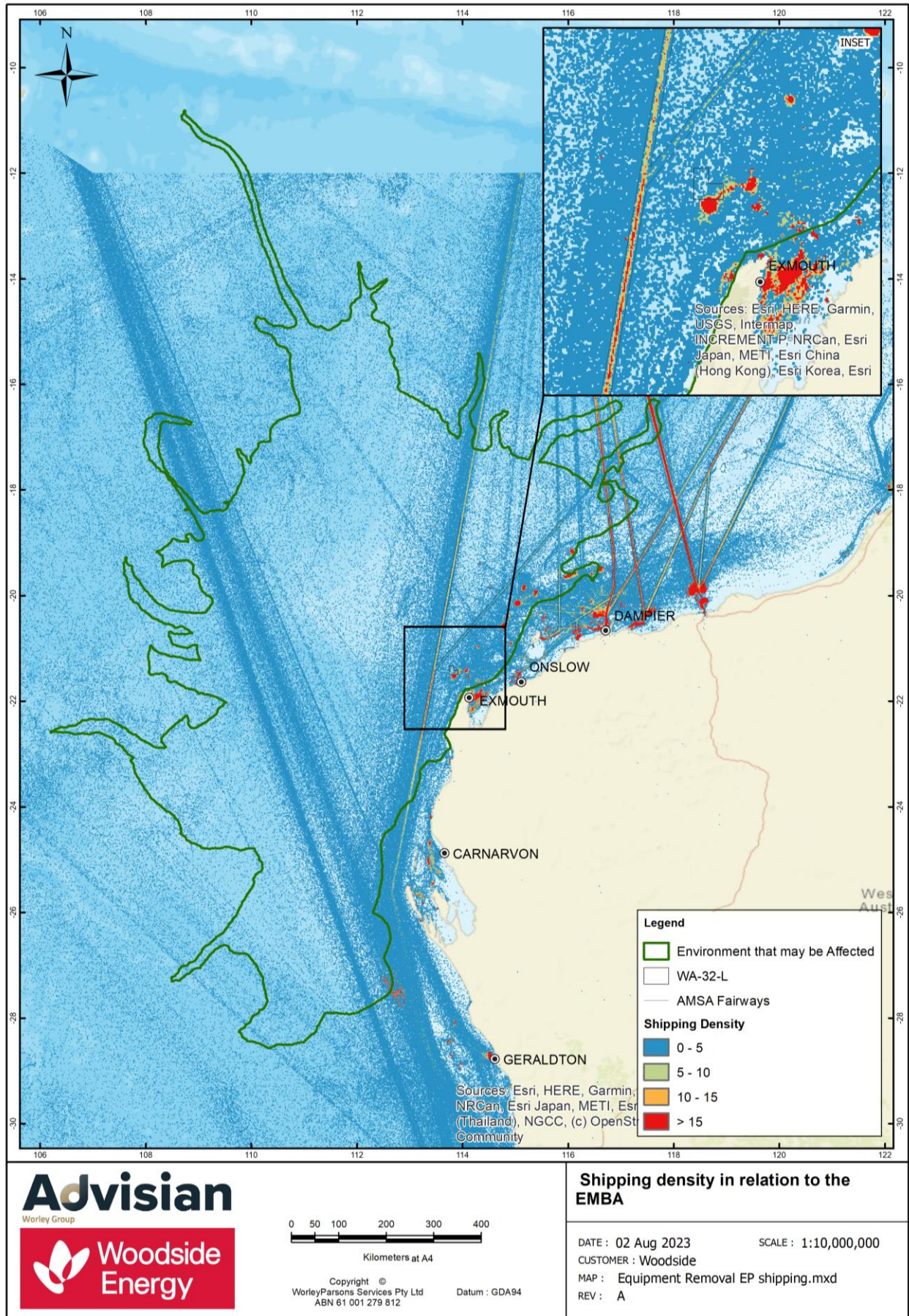


Figure 4-21: Commercial shipping traffic in the vicinity of the operational area

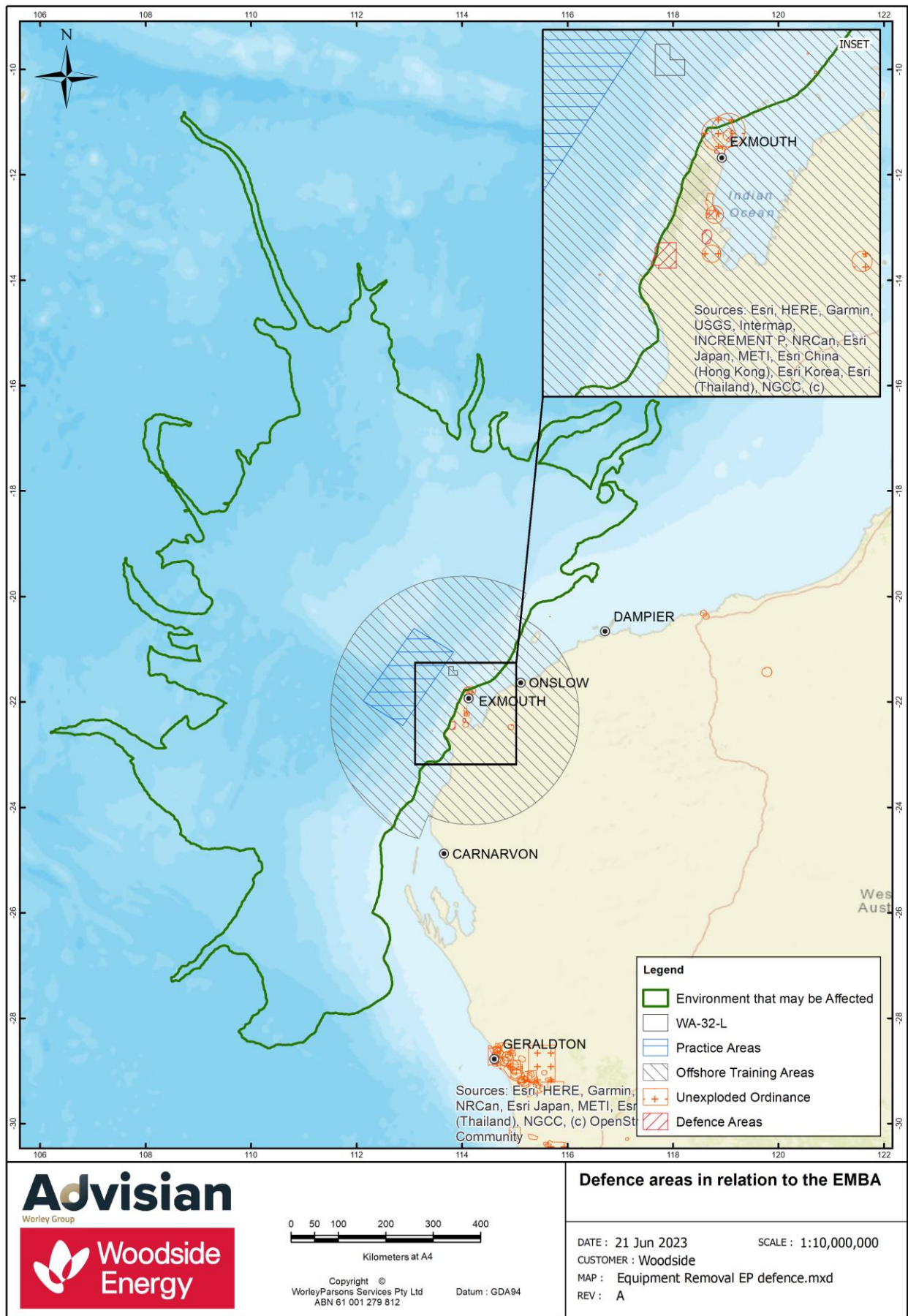


Figure 4-22: Defence areas in the vicinity of the operational area

5 Consultation

5.1 Consultation Summary

Woodside consults relevant persons in the course of preparing an EP in accordance with regulation 11A 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 3 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 5.2** and **5.5.1**) delivered on 2 December 2022.

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

Woodside's consultation methodology is divided into three parts:

- The first part (**Sections 5.2 to 5.7**) provides an overview of Woodside's consultation methodology for its EPs, including how we apply regulation 11A(1) of the Environment Regulations to identify relevant persons.
- The second part (**Section 5.8**) explains Woodside's application of the consultation methodology and Woodside's assessment of relevant persons for this EP.
- The third part (**Section 5.9**) 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 objections or claims.
 - Engagement with persons or organisations that Woodside chose to contact who are not relevant persons for the purposes of regulation 11A(1) of the Environment Regulations (see **Section 5.3.4**).

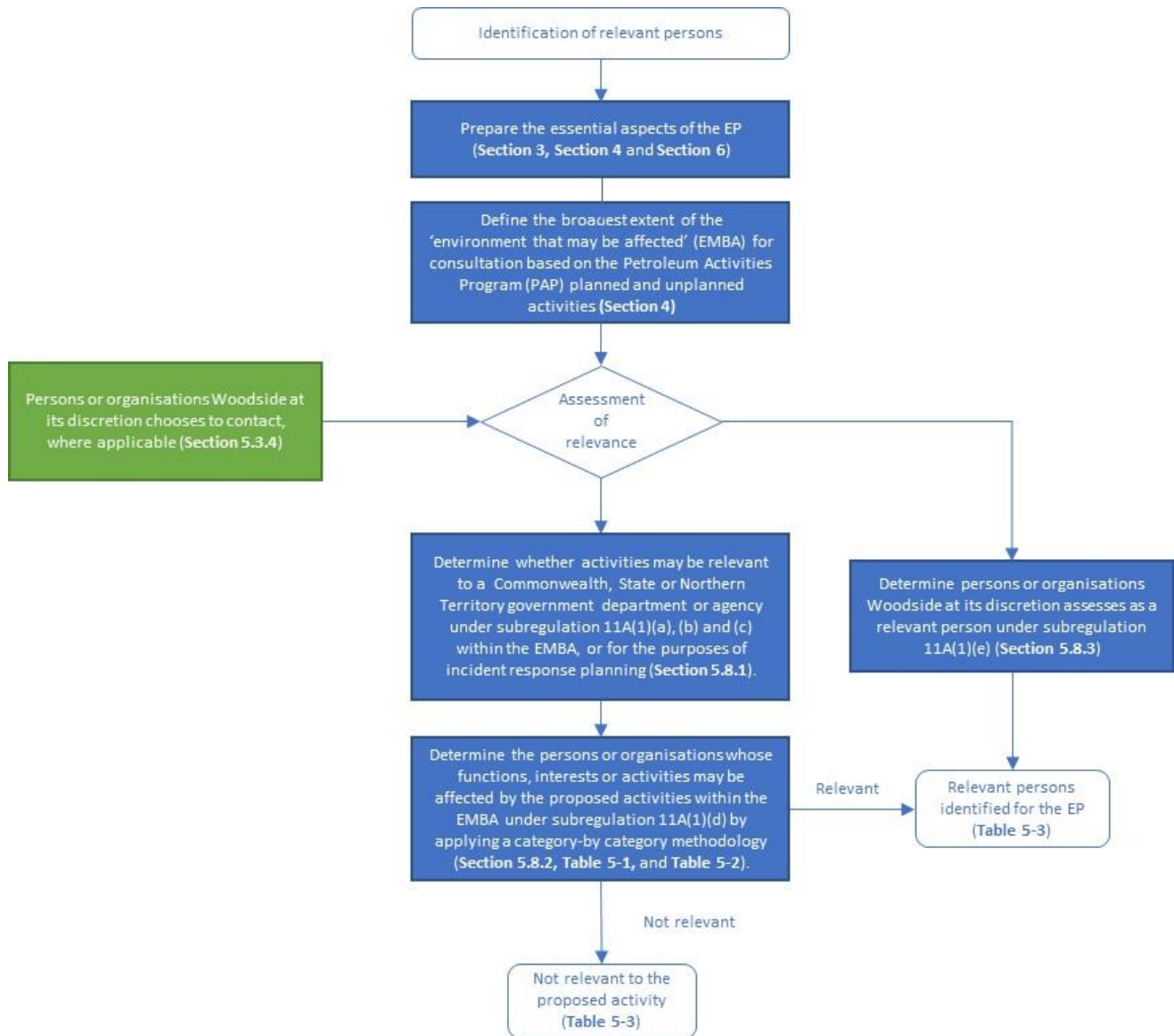


Figure 5-1: Overview of Woodside’s methodology to identify relevant persons

5.2 Consultation – General Context

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

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

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

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

The Tipakalippa Appeal has also been further considered in the context of specific methods for consultation with First Nations relevant persons (**Section 5.5.1**).

In order to undertake consultation, Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 11A(1) of the Environment Regulations (**Section 5.3**). This methodology reflects NOPSEMA's recent guideline and demonstrates that, in order to meet the requirements of regulation 10A (criteria for EP acceptance) when preparing the EP, Woodside understands:

- our planned activities in the Operational Area, being the area in which our planned activities are proposed to occur (see **Section 3.3**)
- the geographical extent to which the environment may be affected (EMBA) by risks and impacts from our activities (unplanned) (identified in **Section 4.1** and assessed in **Section 8.2**).

Woodside has undertaken consultation in the course of preparing this EP in compliance with regulation 11A 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 Department or agency of the Commonwealth to which the activities to be carried out under the environment plan, or the revision of the environment plan, may be relevant
 - each Department or agency of a State or the Northern Territory to which the activities to be carried out under the EP, or the revision of the EP, may be relevant
 - the Department of the responsible State Minister, or 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, or the revision of the EP
 - any other person or organisation that the titleholder considers relevant (regulation 11A(1)).
- give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on their functions, interests or activities (regulation 11A(1)(2))
- allow a relevant person a reasonable period for the consultation (regulation 11A(1)(3))
- tell each relevant person that the titleholder consults with that the relevant person may request that particular information it provides in the consultation not be published and any information subject to such a request is not to be published (regulation 11A(1)(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**
- is intended to reduce the environmental impacts and risks from the activity to ALARP and an acceptable level
- 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 that the petroleum activity may otherwise cause
- is collaborative; Woodside respects that for a relevant person, consultation is voluntary. Where the relevant person seeks to engage, Woodside collaborates with the relevant person with the aim of seeking genuine and meaningful two-way dialogue
- provides opportunities for relevant persons to provide feedback throughout the life of the EP through its ongoing consultation process (refer to **Section 5.7** and **Section 11.9**).

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

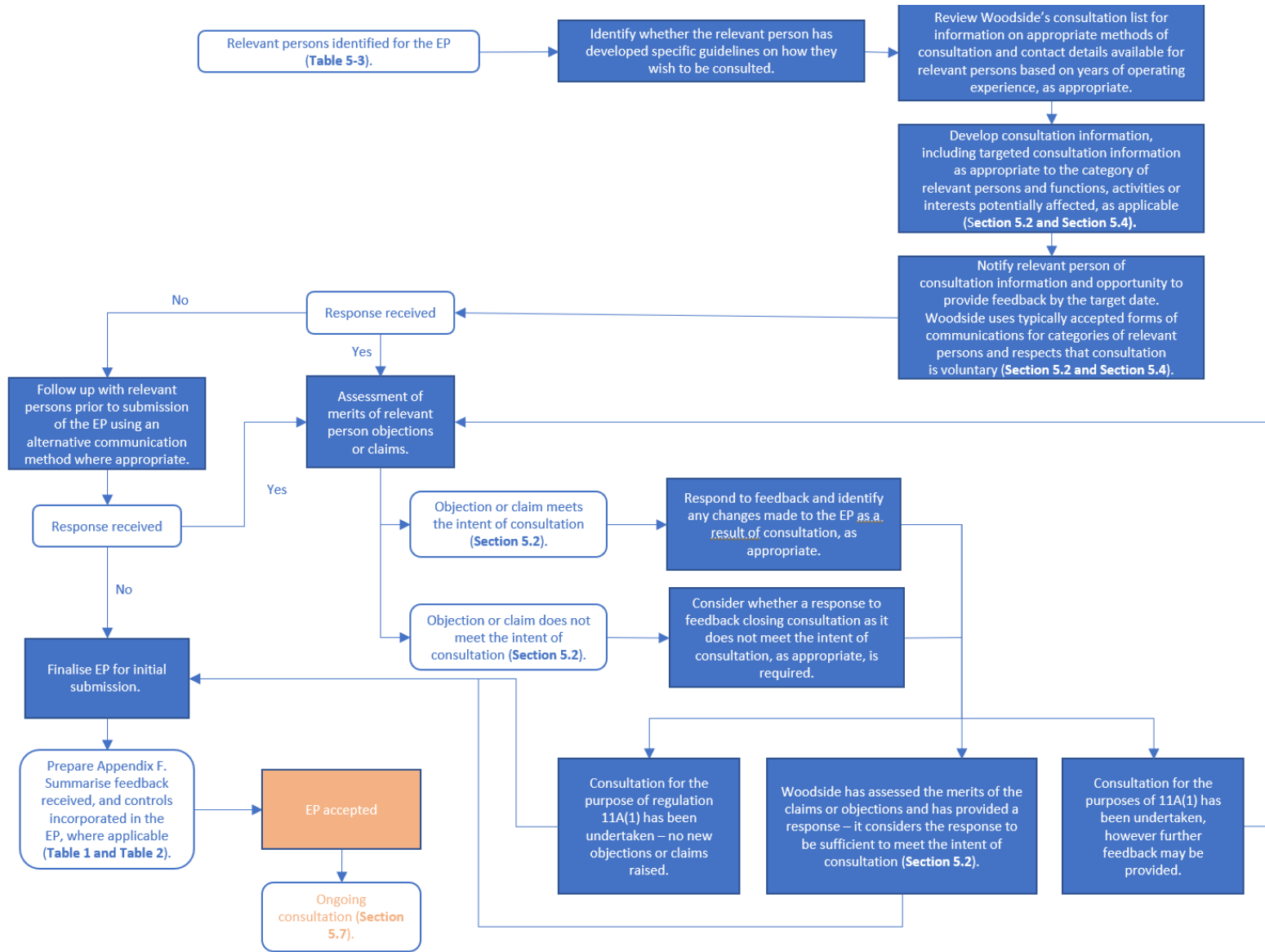


Figure 5-2: Overview of Woodside's consultation approach.

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](#)
- NOPSEMA:
 - [GL2086 – Consultation in the course of preparing an environment plan – May 2023](#)
 - [GN1847 - Responding to public comment on environment plans - July 2022](#)
 - [GN1344 - Environment plan content requirements - September 2020](#)
 - [GL1721 - Environment Plan Decision Making Guideline - December 2022](#)
 - [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 2023](#)
 - [PL2098 – Draft Policy for managing gender-restricted information](#)
 - [Consultation on offshore petroleum environment plans – Information for the community](#)
- Department of Climate Change, Energy, the Environment and Water:
 - [Sea Countries of the North-West; Literature review on Indigenous connection to and uses of the North West Marine Region](#)
- Australian Fisheries Management Authority:
 - [Petroleum industry consultation with the commercial fishing industry](#)
- Commonwealth Department of Agriculture and Water Resources:
 - [Fisheries and the Environment – Offshore Petroleum and Greenhouse Gas Act 2006](#)
 - [Offshore Installations Biosecurity Guide](#)
- WA Department of Primary Industries and Regional Development:
 - [Guidance statement for oil and gas industry consultation with the Department of Fisheries](#)
- WA Department of Transport:
 - [Offshore Petroleum Industry Guidance Note](#)
- Good practice consultation:
 - [IAP2 Public Participation Spectrum](#)
 - [Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Act 1999](#)

5.3 Identification of Relevant Persons for Consultation

5.3.1 Regulations 11A(1)(a), (b) and (c)

The relevant inquiry for determining relevant persons within the description of regulations 11A(1)(a) and (b) is whether the activities to be carried out under the EP may be relevant to one of the government departments or agencies in those regulations. The government departments and agencies relevant to this EP are listed in **Table 5-3** below. In accordance with regulation 11A(1)(c), Woodside consults with the department of the relevant State Minister.

5.3.2 Regulation 11A(1)(d)

In order to identify a relevant person for the purposes of regulation 11A(1)(d), the meaning of “functions, interests or activities” needs to be understood. In regulation 11A(1)(d), the phrase “functions, interests or activities” should

be construed broadly and consistently with the objects of the Environment Regulations (Regulation 3) 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 4 of the Environment Regulations and is likely be directed to what the relevant person is already doing.

As discussed in **Sections 5.1** and **5.2**, Woodside's methodology for determining 'relevant persons' for the purpose of regulation 11A(1)(d) of the Environment Regulations includes consideration of:

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

5.3.3 Regulation 11A(1)(e)

In addition to assessing relevance under regulation 11A(1)(d), Woodside has discretion to categorise any other person or organisation as a relevant person under regulation 11A(1)(e).

5.3.4 Persons or Organisations Woodside Chooses to Contact

In addition to undertaking consultation with relevant persons under regulation 11A(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 11A(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 11A(1) but have been contacted as a result of consultation requirements changing or updated guidance from the Regulator
- where it is unclear what their functions, interests or activities are, or whether their functions, interests or activities may be affected. In this circumstance, engagement is required to inform relevance under Woodside's methodology. Woodside follows the same methodology for assessing a person or organisations relevance as it does during its initial assessment (as described in **Figure 5-1** and **Section 5.8**). The result of Woodside's assessment of relevance during the development of the EP is outlined at **Table 5-2**.

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

5.4 Consultation Material and Timing

Regulation 11A(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 11A(3) provides that the titleholder must allow a relevant person a reasonable period for the consultation.

As set out in **Section 5.2**, Woodside notifies relevant persons, of the proposed activities, respecting that consultation is voluntary (for the relevant person) and collaborates on a consultation approach where further engagement is sought by the relevant person. Woodside understands that the consultation process should be

appropriate for the category of relevant persons and that not all persons or organisations will require the same level of engagement. Woodside recognises that the level of engagement is dependent on the nature and scale of the petroleum activities. Woodside recognises published guidance for good practice consultation relevant to different sectors and disciplines (see **Section 5.2**). 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.

5.4.1 Sufficient Information

Woodside produces a Consultation Information Sheet for each EP. This is provided to relevant persons and organisations and is also available on Woodside's website for interested parties to access and to provide feedback on. The Consultation Information Sheet typically includes a description of the proposed petroleum activity, the Operational Area or Petroleum Activity Area depending on the EP, where the activity will take place, the timing and duration of the activity, a location map of the Operational Area and EMBA, a description of the EMBA, relevant exclusion zones as well as a summary of relevant risks and mitigation and/or management control measures relevant to the proposed petroleum activity. It also sets out contact details to provide feedback to Woodside.

Woodside recognises that the level of information necessary to assist a person or organisation to understand the impacts of the proposed activity on their functions, interests or activities may vary and, also may depend on the degree to which a relevant person is affected. For example, Woodside considers that relevant persons who may be impacted by planned activities in the Operational Area, 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* (NOPSEMA, 2023), 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 5.8** 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 in line with the intent of consultation (see **Section 5.2**), the threshold for genuine two-way engagement is met via information on incorporation of controls, where applicable, being provided to the relevant person to ensure the relevant persons understands 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 <u>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023</u> by using email for its consultation unless another form of communication is requested. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used where requested.
Government departments / agencies – environment	
Government departments / agencies – industry	
Commercial fisheries and peak representative bodies	<p>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.</p> <p>State commercial fisheries and recreational marine users: The Western Australian Department of Primary Industries and Regional Development (DPIRD) has responsibility for managing the <i>Fish Resources Management Act 1994</i> and <i>Aquatic Resources Management Act 2016</i>, which limits the provision of contact details from the register to the name and business address of licence holders. Alternative forms of communication are at the licence holder’s discretion. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used 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>
Recreational marine users and peak representative bodies	
Titleholders and Operators	Email is used as the primary form of communication between titleholders and operators in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used 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.
Historical heritage groups or organisations	NOPSEMA’s guideline (<u>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023</u>) 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	<p>Local government: NOPSEMA’s guideline (<u>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023</u>) for engagement with local government is used as a reference for Woodside’s approach for communicating with historical heritage groups or organisations.</p> <p>Community reference/liaison groups and chambers of commerce: Email is used as the primary form of communication with local community reference/liaison groups or organisations in the ordinary course of business. Other forms of</p>

Category of Relevant Person	Typically Accepted Form of Communication
	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 11A but which Woodside has chosen to contact (see **Section 5.3.4**).

When engaging in consultation, Woodside notifies relevant persons that, in accordance with regulation 11A(4), the relevant person may request that particular information the person or organisation provides in the consultation not be published and that information subject to that request will not be published.

5.4.2 Reasonable Period for Consultation

Woodside seeks to consult in order to support preparation of its 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 in line with the intent of consultation (see **Section 5.2**), the threshold for genuine two-way engagement is met via engagement on incorporation of controls, where applicable, being provided to the relevant person so that the relevant person understand 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 11A(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:

- Consultation under regulation 11B of the Regulations sets out a public consultation period of 30 days
- The Department of Mines and Petroleum “Guidelines for Consultation with Indigenous People by Mineral Explorers” directs a period of 21- 30 days of consultation with traditional owners
- Guidance taken from the Aboriginal Cultural Heritage Act 2021—Consultation Guidelines (Government of Western Australia, 2023) suggests that up to 12 weeks may be a reasonable period of time to allow identification, contact, and response, from First Nations peoples (subject to any alternative timeframe being agreed through co-design of consultation).

This period of consultation demonstrates that Woodside has provided a “reasonable period” for relevant persons to consult in accordance with regulation 11A(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...”³

³ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [136].

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 5.3.4**), 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 11A is complete.

As detailed in **Section 5.7** 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.

5.4.3 Discharge of Regulation 11A

The Full Federal Court made clear in the Tipakalippa Appeal that consultation should be approached in a “reasonable”, “pragmatic” and “not so literal” way, so that consultation obligations were capable of being met by titleholders (**Section 5.5.1**).⁴ Consultation is a “real world activity” and must be capable of reasonable discharge.⁵ 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.⁶

When the titleholder demonstrates that it has provided sufficient information and a reasonable period for consultation, the regulation 11A consultation requirements are met.⁷ Meeting these requirements is the evaluative judgment to determine reasonable satisfaction of the consultation obligation, and as such, the regulator uses its discretion to determine if these criteria are met. The nature of the person being consulted, and their function, interest and activity that may be affected, will inform the manner of consultation and the reasonable period to be afforded.⁸

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.⁹ A reasonable opportunity may not be every opportunity requested and is limited to reasonable opportunities to consult.

⁴ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [89], [98], [103]-[104] and [109].

⁵ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [89].

⁶ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [96] and [103].

⁷ Explanatory Statement, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, page 29.

⁸ 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].

⁹ 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].

Woodside has completed all practicable and 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 impacts and risks of the activity on their functions, interests or activities, and sufficient time to provide relevant feedback for Woodside to assess relevant persons' claims and action the assessment and response. Woodside has also provided a reasonable opportunity for relevant persons to engage in genuine two-way dialogue on environmental impacts and concerns.

Woodside has discharged its duty under regulation 11A. Woodside considers that consultation under regulation 11A is complete.

Appendix F, Table 1 and Table 2 of this EP sets out the history of consultation under regulation 11A. To the extent a relevant person says that it has further information to share or claims that consultation under regulation 11A has not completed, **Appendix F, Table 1 and Table 2** provide reasons specifically why Woodside considers consultation under regulation 11A has been met in relation to that relevant person.

5.5 Context of Consultation Approach with First Nations

To comply with regulation 11A, Woodside identifies and consults Traditional Custodians whose functions, interests or activities may be affected by the activities under an EP.

5.5.1 Approach to Methodology – Woodside’s Interpretation of Tipakalippa

Woodside has implemented a consultation methodology consistent with regulation 11A and guidance provided in the Tipakalippa Appeal (**Section 5.2**). Woodside’s consultation methodology allows for a sufficiently broad capture of Traditional Custodian relevant persons, provides for informed consultation, follows cultural protocols and allows a reasonable opportunity for consultation with Traditional Custodians whose functions, interests and activities may be affected by the activity described in this EP (**Section 5.5.2.1 to 5.5.2.3**).

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 11A 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” way¹⁰ and how obligations to consult “each and every” person under regulation 11A 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.”¹¹

*“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”¹² (emphasis added).*

“there is no definition of what constitutes “consultation for the purpose of ref 11A... A titleholder will need to “demonstrate” to NOPSEMA that what it did constituted consultation appropriate and adapted to the nature of the interests of the relevant persons”¹³ (emphasis added).

It is clear from the Court's statement in relation to consultation with organisations 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.¹⁴ 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

¹⁰ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95], [98], [103]-[104] and [109].

¹¹ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [98].

¹² Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [96].

¹³ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [104].

¹⁴ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [47] and [48].

person or group. Woodside has met its regulation 11A requirements through its consultation methodology (**Section 5.2**).

Consistent with the Tipakalippa Appeal, Woodside considers NTA-style “full group” meetings are not the only way for there to be compliance with regulation 11A 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.

5.5.2 Consultation Method

Woodside's First Nations team has extensive expertise 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 Full Court in the Tipakalippa Appeal explicitly endorsed methods of consultation with groups of relevant persons that are appropriate and adapted to the characteristics of groups.¹⁵ Woodside's consultation methodology is adapted and appropriate to the recognised systems of communal interests in Western Australia.

In Western Australia (relevant for this EP), Woodside has sought to follow the established, effective and respectful means of communication used by Native Title Representative Bodies and nominated representative corporations (including PBCs) with their respective First Nations communities. Woodside follows these processes for the appropriate broad capture of individuals' awareness of our activities, to self-identify (**Section 5.5.2.2**), and to provide feedback to inform the management of environmental impacts and risks.

Using these tools, Woodside communicates information about 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.

¹⁵ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95],[104],[153].

- utilising social media (i.e. Facebook/Instagram), texts and emails. These mediums are the preferred communication methods used by Traditional Custodians throughout Western Australia and on that basis used by Native Title Representative Bodies and other government agencies and industry, to engage with Traditional Custodians or call meetings. First Nations woman, Professor Bronwyn Castle through 10 years of research found "...social media is an intrinsic part of daily life. The use of Facebook is around 20 per cent higher [among First Nations people] than the national average across all geographical locations" (Social media mob: being Indigenous online, Professor Bronwyn Carlson (2018)).
- For ongoing consultation post regulation 11A consultation, Woodside introduced a Program of Ongoing Engagement with Traditional Custodians which sets out Woodside's commitment to ongoing engagement and support to care for and manage country, including Sea Country. The program was developed in response to Traditional Custodian feedback.
- Woodside has members of its First Nations team who are based in Karratha and Roebourne and who serve as on-Country points of contact for First Nations organisations and individuals. These team members have broad local knowledge and established, on-the-ground relationships within communities. This helps contribute to positive outcomes including encouraging First Nations attendance and involvement at Woodside's information sessions and Community roadshows. Team members on the ground engage in a great deal of preparatory work including by distributing information and providing notice to the community to support First Nations attendance at information sessions and Community roadshows.
- From the commencement of engagement with Traditional Custodians, Woodside seeks direction on how they prefer to be consulted and has consulted accordingly. Consultation processes that are informed by Traditional Custodians and co-designed on a case-by-case basis and includes their direction as to cultural protocols, structure of consultation and whom to appropriately consult with (such as Elders).
- Holding meetings on country at a place and time agreed with the Traditional Custodians and offering and providing financial assistance for meeting expenses (as appropriate).
- Providing information specifically designed to be easily understood, to reach all relevant people, and give a reasonable period of time for those people to make an informed assessment of the possible consequences of the proposed activity on them.

5.5.2.1 Identification of Relevant Persons

In order to undertake consultation, Woodside has developed a methodology for identifying all relevant persons, in accordance with regulation 11A(1) of the Regulations (**Section 5.2** and **5.3**).

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

Woodside asks nominated representative corporations (such as PBCs) and Native Title Representative Bodies to identify individuals that should be consulted, and enables individuals to self-identify in response to national and local advertising, social media and community engagement opportunities (**Section 5.5.2.2** and **5.9.2**). 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 5.5.2.2** below, individuals are also given the opportunity to self-identify, consult and provide their own feedback on the proposed activity. When approached in this way, Woodside will engage individuals as relevant persons and will also (subject to any confidentiality or cultural restrictions) advise the nominated representative body of the consultation where it relates to cultural values. These methods of consultation are consistent with requirements for notification under the *Native Title Act 1993* (Cth), such as under the future act provisions (section 29), which requires notification of the Native Title Representative Body, the PBC (or nominated representative) and notification through newspapers. The notification process has been

selected as a respectful, practical and pragmatic analogue for consultation with 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)¹⁶.

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.

5.5.2.2 Opportunity to Self-identify and Identifying Other Individuals

Woodside requests nominated representative corporations and Native Title Representative Bodies to identify other individuals to consult with or individuals who may seek to self-identify for a proposed activity. Woodside also advertises broadly through Indigenous, national and local advertising, social media and community engagement opportunities (as described in **Section 5.9.2**) 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 5.5.2.1**). 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.

For this proposed activity, Woodside requested nominated representative corporations (including PBCs) and Native Title Representative Bodies to identify any potential individual relevant persons for consultation, and to distribute consultation materials to their member base. However, Woodside recognises the process is voluntary and it cannot compel them to do so nor seek to audit the representative entities for compliance with any request. Woodside has not been directed to engage individual Traditional Custodians by nominated representative corporations for this proposed activity. Woodside has nevertheless provided reasonable opportunity for individual Traditional Custodians to engage in consultation through appropriate and adapted consultation methods.

5.5.2.2.1 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 also may depend on the degree to which a relevant person is potentially 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 5.4.1**). In response to Traditional Custodians' feedback, Woodside has tailored effective consultation methods for its activities, specifically designed for Traditional Custodians, so that information is provided in a form that is readily accessible and appropriate. The targeted Consultation Summary Sheet (as described in **Section 5.9.2**) developed and reviewed by Indigenous

¹⁶ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193, at [104]

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.

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.

5.5.2.3 Reasonable Period for Consultation

Woodside seeks to consult in order to support preparation of its EP. Woodside recognises that what constitutes a reasonable period for consultation should be considered on a case-by-case basis, with reference to the nature, scale and complexity of the activity (**Section 5.4.2**).

5.5.2.4 Discharge of Regulation 11A

In relation to Traditional Custodian relevant persons (and all relevant persons), Woodside has discharged its duty under regulation 11A. Woodside considers that consultation under regulation 11A is complete (**Section 5.4.3**).

5.6 Providing Feedback and Assessment of Merit of Objections or Claims

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

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

Woodside accepts feedback and engages in consultation in order to achieve the aims set out in **Section 5.2**. Woodside recognises that there are persons and organisations that take a view that Woodside's operations and/or growth projects should be stopped or at least delayed as far as possible. Whilst Woodside assesses the merits of objections or claims received, it acknowledges NOPSEMA's guidance in its brochure entitled Consultation on offshore petroleum environment plans information for the community, which states that relevant persons are free to respond on any matter and raise any concern, however this may not be able to be considered if it is outside the scope or purpose of the environment plan and approval process, for example, statements of fundamental objection to offshore petroleum activities or information containing personal threats or profanities.

Feedback from relevant persons is reviewed and an assessment of the merits is made of information provided as well as objections or claims about the adverse impact of each activity to which the EP relates. This might, for instance, be done through a review of data and literature and for relevance to the nature and scale of the activity outlined in the EP. Consistent with the aim of consultation in **Section 5.2**, Woodside will consider information received when reviewing and designing measures to put in place to minimise harm to relevant persons and where reasonable or practical to further manage impacts and risks to ALARP and acceptable levels.

Woodside considers feedback during consultation from relevant persons and other persons Woodside chose to contact (see **Section 5.3.4**). This information is summarised in **Appendix F, Table 1** and **Table 2** of the EP and includes a statement of Woodside's response, or proposed response, if any, to each objection and claim.

In accordance with regulation 9(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 11A, must be contained in the sensitive information part of the plan and not anywhere else in the plan.

5.7 Ongoing Consultation

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

As per Woodside’s ongoing consultation approach (refer to **Section 11.9**), feedback and comments received from relevant persons continue to be assessed and responded to, as required, throughout the life of an EP, including during its assessment and once accepted, in accordance with the intended outcome of consultation (as set out in **Section 5.2**).

Should consultation feedback be received following the acceptance of an EP that identifies a measure or control that requires implementation or updates to meet the intended outcome of consultation (see **Section 5.2**), Woodside will apply its Management of Change and Review process as appropriate (see **Section 11.8.5**).

5.8 Woodside’s Methodology to Identify Relevant Persons

5.8.1 Identification of Relevant Persons under Regulation 11A(1)(a), (b) and (c)

Woodside’s methodology for identifying relevant persons under regulations 11A(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 *Consultation with Commonwealth agencies with responsibilities in the marine area* guideline (NOPSEMA, 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 5.2**).

- The list of those government departments and agencies assessed as relevant is set out in **Table 5-3**.
- Feedback received, if any, is assessed in accordance with the intended outcome of consultation (as set out in **Section 5.2**) 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.

5.8.2 Identification of Relevant Persons under Regulation 11A(1)(d)

Relevant persons under regulation 11A (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, or a revision of the EP. In identifying relevant persons, Woodside considers:

- the planned activities to be carried out under this EP (described in **Section 3**); and
- the EMBA by unplanned activities (identified in **Section 4** and assessed in **Section 6**).

To identify relevant persons who fall within regulation 11A(1)(d), Woodside adopts the following methodology, and then undertakes consultation with relevant persons which is set out further in **Section 5.9**.

- 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.
- This assessment will include applying professional 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. For this EP, the broad categories are identified in **Table 5-1** below and identification methodology applied as set out in **Table 5-2**.
- The list of those persons or organisations assessed as relevant and persons or organisations Woodside chose to contact is set out in **Table 5-3**.
- Feedback received, if any, is assessed in accordance with the intended outcome of consultation (as set out in **Section 5.2**) and applying the categories of relevant persons methodology outlined in **Table 5-2**, as appropriate.
- Feedback from relevant persons is summarised at **Appendix F, Table 1**. Feedback from persons assessed as not relevant but whom Woodside chooses to contact is summarised at **Appendix F, Table 2**.

Table 5-1: 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 Commonwealth <i>Fisheries Management Act 1991 (Cth)</i> and Western Australian <i>Fish Resources Management Act 1994 (WA)</i> , which may be amended from time to time. Commonwealth peak fishery representative bodies are identified by AFMA. WAFIC is the peak representative body for state fishers in Western Australia.
Recreational marine users and peak representative bodies	Charter boat, tourism and dive operators identified by DPIRD specific to the location of the proposed activity.

Category	Explanation
	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)	<p>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.</p> <p>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.</p>
Nominated Representative Corporations	<p>Nominated representative corporations are Traditional Custodians' nominated representative institutions such as Prescribed Body Corporates (PBC).</p> <p>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.</p>
Native Title Representative Bodies	A Representative Aboriginal/Torres Strait Islander Bodies (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993</i> (NTA) with prescribed functions, set out in Part 11 of the <i>Native Title Act 1993</i> , which relate to: facilitation and assistance; certification; dispute resolution; notifications; agreement making. They are also known, and referred to here, as Native Title Representative Bodies.
Historical heritage groups or organisations	Legislated or government enlisted groups or organisations responsible for the management of marine heritage.
Local government and recognised local community reference/liaison groups or organisations	Local government governed by the <i>Local Government Act 1995</i> (WA) which is responsible for representing the local community. Recognised local community reference/liaison group or organisation in relation to oil and gas matters.
Other non-government groups or organisations	Non-government organisation with public website material targeting the proposed activity.
Research Institutes and local conservation groups or organisations	<p>Research institutes are government or private institutions that conduct marine or terrestrial research.</p> <p>Local conservation groups are local non-government organisation that regularly conduct conservation activities focused on the local environment or wildlife.</p>

Table 5-2: Methodology for identifying relevant persons within the EMBA undertaken under subcategory 11 A (1) (d) – by category

Category	Relevant Person Identification Methodology
<p>Commercial fisheries (Commonwealth and State) and peak representative bodies</p>	<p>Woodside assesses relevance for commercial fisheries (Commonwealth and State) and their representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ Defining the parameters having regard to timing, location and duration of the proposed petroleum activity. ▪ Confirming whether the EMBA overlaps with the fisheries management area (i.e., the spatial area the fishery is legally permitted to fish in) (see Section 4.7). ▪ Woodside acknowledges WAFIC’s consultation guidance¹⁷ (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 (see Appendix D). ▪ For Commonwealth and State commercial fisheries, Woodside assesses the potential spatial and temporal extent for interaction with the fishery by reviewing AFMA ABARES and DPIRD Fishcube data within the Operational Area and EMBA (see Section 4.7.2). <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 Operational Area or EMBA (see Section 4.7.2) 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; and – 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 the Operational Area or EMBA (see Section 4.7.2) 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, 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>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.

a. ¹⁷ [Consultation Approach for Unplanned Events - WAFIC](#)

Category	Relevant Person Identification Methodology
	<ul style="list-style-type: none"> ▪ 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.
Titleholders and Operators	<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.
Peak industry representative bodies	<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 any additional peak industry representative bodies have been created whose responsibilities may overlap with Woodside's proposed activities within the EMBA. <p>Assessment of relevance:</p> <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.
Traditional Custodians (individuals and/or groups/entity) and Nominated Representative Corporations	<p>Consistent with its understanding of the matters discussed in Section 4.7.1 and 5.5, to identify Traditional Custodian groups or individuals, Woodside:</p> <ul style="list-style-type: none"> ▪ Uses existing systems of recognition to identify First Nations groups who overlap or are coastally adjacent to the EMBA (for example, recognition provided under native title or cultural heritage legislation, or marine park management plans, or identification by other First Nations groups or entities) (Section 4.7.1) ▪ 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 5.5.2.1)

Category	Relevant Person Identification Methodology
	<ul style="list-style-type: none"> ▪ Requests the nominated representative body to forward the notifications and invitations to consult to their members (members are individual communal rights holders) (Section 5.5.2.1) ▪ Requests advice as to other First Nations groups or individuals that should be consulted (Section 5.5.2.1) ▪ Requests the nominated representative body to provide consultation materials to its members (Section 5.5.2.2.1) ▪ Advertises widely so as to invite self-identification and consultation by First Nations groups and/or individuals (Section 5.5.2.2.1). <p>Further detail to Woodsides methodology is as follows.</p> <p>Woodside uses the databases of the National Native Title Tribunal (Section 5.5.2.1):</p> <ul style="list-style-type: none"> ▪ to understand whether there are any Native Title Claims (historical or current) or determinations overlapping or coastally adjacent to the EMBA ▪ to understand whether there are any relevant Indigenous Land Use Agreements (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 any 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>In the WA context, any Aboriginal Corporation appointed as a Local Aboriginal Cultural Heritage Service (LACHS) under the <i>Aboriginal Cultural Heritage Act 2021</i> for an area that overlaps the EMBA.</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 any other means.</p> <p>Woodside has a number of public notification and information sharing processes by which individual Traditional Custodians can become aware of the proposed activity, its risks and impacts, and self-identify.</p> <p>Individuals that consider their functions, interests or activities may be affected by a proposed activity are provided an opportunity to self-identify for each EP. Woodside does not presume that self-identification for an activity, covered by another EP, automatically means that an individual/s functions, interest and activities may be affected by other activities where EMBA's overlap. This decision is for the individual to make. The public notification, information sharing, and consultation processes Woodside puts in place enables Traditional Custodians to become aware of proposed activities, assess any risks and impacts to their values, and enable individuals to self-identify.</p> <p>Assessment of relevance:</p> <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.

Category	Relevant Person Identification Methodology
Native Title Representative Bodies	<p>Woodside assesses relevance for Native Title Representative Bodies using the following steps in its methodology (Section 4.7.1):</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 4.7.1). <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 any 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). <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.

Category	Relevant Person Identification Methodology
	<ul style="list-style-type: none"> ▪ The community reference/liaison group whose defined area of responsibility overlaps the EMBA is assessed as relevant and consulted collectively via the relevant reference/liaison group.
Other non-government groups or organisations	<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 5.2) will be assessed as relevant.
Research institutes and local conservation groups or organisations	<p>Woodside assesses relevance for research institutes and local conservation groups or organisations using the following next steps in its methodology:</p> <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.

5.8.3 Identification of Relevant Persons under Regulation 11A(1)(e)

Woodside adopts a case-by-case approach for each EP to assess relevance under regulation 11A(1)(e).

5.8.4 Assessment of Relevant Persons for the Proposed Activity

The result of Woodside’s assessment of relevant persons in accordance with regulation 11A(1) is outlined at **Table 5-3** 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 5.3.4** or self-identified and Woodside assessed as not relevant are summarised at **Table 5-3** and **Appendix F, Table 2**.

Table 5-3: Assessment of relevance

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
<i>Commonwealth and WA State Government Departments or Agencies – Marine</i>			
Australian Border Force (ABF)	Responsible for coordinating maritime security	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 11A(1)(a). ABF’s responsibilities may be relevant to the activity as there are proposed vessel activities.	Yes
Australian Fisheries Management Authority (AFMA)	Responsible for managing Commonwealth fisheries	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 11A(1)(a). The Western Deepwater Trawl Fishery is active in the Operational Area. The North West Slope and Trawl Fishery, Western Deepwater Trawl Fishery and Western Tuna and Billfish Fishery are active in the EMBA. AFMA’s responsibilities may be relevant to the activity as the Western Deepwater Trawl Fishery is active in the Operational Area, and the North West Slope and Trawl Fishery, Western Deepwater Trawl Fishery and Western Tuna and Billfish Fishery are active in the EMBA.	Yes
Australian Hydrographic Office (AHO)	Responsible for maritime safety and Notices to Mariners	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 11A(1)(a). AHO’s responsibilities may be relevant to the activity as there are proposed vessel activities.	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 11A(1)(a). AMSA – Marine Safety’s responsibilities may be relevant to the activity as there are proposed vessel activities.	Yes
Australian Maritime Safety Authority (AMSA) – Marine Pollution	Legislated responsibility for oil pollution response in Commonwealth waters	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 11A(1)(a). AMSA – Marine Pollution’s responsibilities may be relevant to the activity as the proposed activity has a hydrocarbon spill risk which may require AMSA response in Commonwealth waters.	Yes

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 <i>(formerly DAWE)</i>	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 11A(1)(a). The Western Deepwater Trawl Fishery is active in the Operational Area. The North West Slope and Trawl Fishery, Western Deepwater Trawl Fishery and Western Tuna and Billfish Fishery are active in the EMBA. DAFF - Fisheries responsibilities may be relevant to the activity as the Western Deepwater Trawl Fishery is active in the Operational Area, and the North West Slope and Trawl Fishery, Western Deepwater Trawl Fishery and Western Tuna and Billfish Fishery are active in the EMBA.	Yes
Department of Defence (DoD)	Responsible for defending Australia and its national interests.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 11A(1)(a). DoD’s responsibilities 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 11A(1)(b). No State fisheries are active in the Operational Area. The Marine Aquarium Managed Fishery, Mackerel Managed Fishery (Area 2 and 3), West Coast Deep Sea Crustacean Managed Fishery, Specimen Shell Managed Fishery, Onslow Prawn Managed Fishery, Exmouth Gulf Prawn Managed Fishery, Gascoyne Demersal Scalefish Fishery, West Coast Demersal Scalefish Fishery, West Coast Rock Lobster Fishery, Pilbara Trawl Fishery, Pilbara Trap Fishery and Pilbara Line Fishery are active in the EMBA. DPIRD’s responsibilities may be relevant to the activity as the government department responsible for State fisheries.	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 11A(1)(b). The proposed activity has a hydrocarbon spill risk, which may require DoT response in State waters.	Yes
Department of Planning, Lands and Heritage (DPLH)	Responsible for state level land use planning and management, and oversight of Aboriginal cultural	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 11A(1)(b).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
	heritage and built heritage matters.	There is known Maritime Cultural Heritage overlapping the EMBA.	
Pilbara Ports Authority	Responsible for the operation of the Port of Dampier.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 11A(1)(b). 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
Commonwealth and WA State Government Departments or Agencies – Environment			
Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (marine pests, vessels, aircraft and personnel) (formerly DAWE)	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. DAFF requests to be consulted where an activity involves the movement of aircraft or vessels between Australia and offshore petroleum activities either inside or outside Australian territory.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 11A(1)(a). DAFF – Biosecurity's (formerly DAWE) responsibilities may be relevant to the proposed activities in the EMBA in the prevention of introduced marine species.	Yes
Department of Climate Change, Energy, the	Responsible for implementing Commonwealth policies and programs to support climate change, sustainable energy use,	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 11A(1)(a).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Environment and Water (DCCEEW) (formerly DAWE)	<p>water resources, the environment and our heritage.</p> <p>Administers the Underwater Cultural Heritage Act 2018 in collaboration with the States, Northern Territory and Norfolk Island, which is responsible for the protection of shipwrecks, sunken aircraft and other types of underwater heritage and their associated artefacts in Commonwealth waters.</p>	<p>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.</p> <p>There are known Maritime Cultural Heritage overlapping the EMBA.</p>	
Director of National Parks (DNP)	<p>Responsible for the management of Commonwealth parks and conservation zones.</p>	<p>Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 11A(1)(a).</p> <p>DNP's responsibilities may be relevant to the activity as DNP requires an awareness of activities that occur within AMPs, and an understanding of potential impacts and risks to the values of parks (NOPSEMA guidance note: N-04750-GN1785 A620236, June 2020). Titleholders are required to consult DNP on offshore petroleum and greenhouse gas exploration activities if they occur in, or may impact on the values of marine parks, including where potential spill response activities may occur in the event of a spill (i.e., scientific monitoring).</p>	Yes
Ningaloo Coast World Heritage Advisory Committee (NCWHAC)	<p>Supports the DBCA to manage the Ningaloo Coast World Heritage Area.</p>	<p>Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 11A(1)(a).</p> <p>The NCWHAC's responsibilities may be relevant to the activity as the EMBA overlaps the Ningaloo Marine Park.</p>	Yes
Department of Biodiversity, Conservation and Attractions (DBCA)	<p>Responsible for managing WA's parks, forests and reserves to achieve wildlife conservation and provide sustainable recreation and tourism opportunities.</p>	<p>Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 11A(1)(b).</p> <p>The DBCA's responsibilities may be relevant to the activity as EMBA overlaps WA parks, forests, or reserves.</p> <p>Activities have the potential to impact marine tourism in the EMBA.</p>	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Commonwealth and State Government Departments or Agencies – Industry			
Department of Industry, Science and Resources (DISR) <i>(formerly Department of Industry, Science, Energy and Resources)</i>	Department of relevant Commonwealth Minister.	Required to be consulted under regulation 11A(1)(a).	Yes
Department of Mines, Industry Regulation and Safety (DMIRS)	Department of relevant State Minister	Required to be consulted under regulation 11A(1)(c).	Yes
Commonwealth Commercial Fisheries and Representative Bodies			
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 11A(1)(d). The fishery does not overlap the Operational Area. The fishery overlaps EMBA and has been active in the EMBA within the last 5 years.	Yes
Southern Bluefin Tuna Fishery	Commonwealth commercial fishery	Woodside has applied its methodology for ‘Commercial fisheries (Commonwealth and State) and peak representative bodies’ under regulation 11A(1)(d). Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the last 5 years. Woodside does not consider that the proposed activity will present a risk to licence holders, given since 1992, the majority of Australian catch has concentrated in south-eastern Australia. (Patterson et al., 2022). In addition, given fishing methods by licence holders for species fished in this fishery (Australia has a 35% share of total global allowable catch of Southern Bluefin Tuna, which is value-added through tuna ranching near Port Lincoln (South Australia), or fishing effort in New South Wales (Australian Southern Bluefin Tuna Industry Association).	No
Western Deepwater Trawl Fishery	Commonwealth commercial fishery	Woodside has applied its methodology for ‘Commercial fisheries (Commonwealth and State) and peak representative bodies’ under regulation 11A(1)(d).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	
Western Skipjack Fishery	Commonwealth commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the last 5 years. Woodside does not consider that the activity will present a risk to licence holders, given the fishery spans the Australian Fishing Zone west of Victoria and the Torres Strait. The Fishery is not currently active and no fishing has occurred since 2009 (Patterson et al., 2022). In addition, interactions are not expected given the species' pelagic distribution fishing methods for species fished by licence holders.	No
Western Tuna and Billfish Fishery	Commonwealth commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). Although the fishery overlaps the Operational Area, it has not been active in the Operational Area within the last 5 years. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
Commonwealth Fisheries Association (CFA)	Represents the interests of commercial fishers with licences in Commonwealth waters	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The Western Deepwater Trawl Fishery is active in the Operational Area. The North West Slope and Trawl Fishery, Western Deepwater Trawl Fishery and Western Tuna and Billfish Fishery are active in the EMBA. CFA's functions may be relevant to the activity as the Western Deepwater Trawl Fishery is active in the Operational Area, and the North West Slope and Trawl Fishery, Western Deepwater Trawl Fishery and Western Tuna and Billfish Fishery are active in the EMBA.	Yes
Australian Southern Bluefin Tuna Industry Association (ASBTIA)	Represents the interests of the Southern Bluefin Tuna Fishery and Western Skipjack Fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). 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.	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		Woodside has provided information to the ASBTIA at its discretion in line with Section 5.3.4. on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.	
Tuna Australia	Represents the interests of the Western Tuna and Billfish Fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The Western Tuna and Billfish Fishery is active within the EMBA. Tuna Australia's functions may be relevant to the activity as the Western Tuna and Billfish Fishery is active in the EMBA.	Yes
Pearl Producers Association (PPA)	Peak representative organisation of The Australian South Sea Pearling Industry, with members in Western Australia and the Northern Territory	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The Pearl Oyster Managed Fishery has been assessed as not relevant to the proposed activity. As the peak representative body for the Pearl Oyster Managed Fishery, the PPA has also been assessed as not relevant. Woodside chose to contact the PPA at its discretion in line with Section 5.3.4.	No
State Commercial Fisheries and Representative Bodies			
Marine Aquarium Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). Although the fishery overlaps the Operational Area, it has not been active in the Operational Area within the last 5 years. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
South West Coast Salmon Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). Although the fishery overlaps the Operational Area and EMBA, the fishery has not been active in the Operational Area or EMBA within the last 5 years. 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).	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		Further, no fishing occurs north of the Perth Metropolitan Area and therefore, no effort occurs within the Operational Area or EMBA.	
Mackerel Managed Fishery (Area 2 and 3)	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). Although Area 3 of the fishery overlaps the Operational Area, it has not been active in the Operational Area within the last 5 years. Area 2 and 3 of the fishery overlap the EMBA and have been active in the EMBA within the last 5 years.	Yes
Pilbara Crab Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the last 5 years.	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 11A(1)(d). Although the fishery overlaps the Operational Area, it has not been active in the Operational Area within the last 5 years. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
Specimen Shell Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). Although the fishery overlaps the Operational Area, it has not been active in the Operational Area within the last 5 years. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
Abalone Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, the fishery has not been active in the EMBA within the last 5 years. Woodside does not consider there to be a potential for interaction given this is a diver and wader fishery with distribution to 5 m depth for Roe's abalone and 40 m depth for greenlip / brownlip abalone.	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Pearl Oyster Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.	No
Land Hermit Crab Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.	No
Onslow Prawn Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
Western Australian Sea Cucumber Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.	No
Exmouth Gulf Prawn Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
Gascoyne Demersal Scalefish Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
West Coast Demersal Scalefish Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
West Coast Rock Lobster Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
Shark Bay Crab Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.	No
Shark Bay Prawn Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.	No
Shark Bay Scallop Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.	No
Octopus Interim Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.	No
West Coast Demersal Gillnet & Demersal Longline Interim Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years.	No
WA North Coast Shark Managed Fishery	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. Although the fishery overlaps the EMBA, it has not been active in the EMBA within the last 5 years. Further, the fishery has not been an active fishery since 2008/09 (DPIRD).	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Demersal Scalefish Fishery: <ul style="list-style-type: none"> ▪ Pilbara Trawl Fishery ▪ Pilbara Trap Fishery ▪ Pilbara Line Fishery 	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
	State commercial fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). Although the fishery overlaps the Operational Area, it has not been active in the Operational Area within the last 5 years. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.	Yes
Western Australian Fishing Industry Council (WAFIC)	Represents the interests of commercial fishers with licences in State waters.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). No State fisheries are active in the Operational Area. The Marine Aquarium Managed Fishery, Mackerel Managed Fishery (Area 2 and 3), West Coast Deep Sea Crustacean Managed Fishery, Specimen Shell Managed Fishery, Onslow Prawn Managed Fishery, Exmouth Gulf Prawn Managed Fishery, Gascoyne Demersal Scalefish Fishery, West Coast Demersal Scalefish Fishery, West Coast Rock Lobster Fishery, Pilbara Trawl Fishery, Pilbara Trap Fishery and Pilbara Line Fishery are active in the EMBA. WAFIC's functions may be relevant to the activity as the peak representative body for State fisheries.	Yes
Western Rock Lobster Council	Represents the interests of the Western Rock Lobster Managed Fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 11A(1)(d). The West Coast Rock Lobster Fishery is active within the EMBA. The Western Rock Lobster Council's functions may be relevant to the activity as the West Coast Rock Lobster Fishery is active in the EMBA.	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
<i>Recreational marine users and representative bodies</i>			
Exmouth Recreational Marine Users	Exmouth-based dive, tourism and charter operators	<p>Woodside has applied its methodology for ‘Recreational marine users and representative bodies’ under regulation 11A(1)(d).</p> <p>Andro Maritime Services Australia, Aquatic Adventure Exmouth, Birds Eye View, Blue Horizon Charters, Blue Lightning Charters,</p> <p>Cape Immersion Tours, Coastal Adventure Tours, Coral Bay Ecotours, Cruise Ningaloo, Dampier Island Tourism, Dive Ningaloo, Evolution Fishing Charters, Exmouth Adventure Co., Exmouth Dive Centre, Indian Chief Charters, Innkeeper Sport Fishing Charter, Kings Ningaloo Reef Tours, Live Ningaloo, Mahi Fishing Charters, Montebello Island Safaris, Ningaloo Aviation, Ningaloo Blue, Ningaloo Coral Bay Boats, Ningaloo Discovery, Ningaloo Ecology Cruises, Ningaloo Fly Fishing, Ningaloo Marine Interaction, Ningaloo Reef Dive, Ningaloo Reef to Range Tours, Ningaloo Safari Tours, Ningaloo Sportfishing Charters, Ningaloo Whaleshark n Dive, Ningaloo Whaleshark Swim, Ocean Eco Adventures, On Strike Charters, Peak Sportfishing Charters, Pelican Charters, Sail Ningaloo, Sea Force Charters, Set the Hook, Three Islands, Top Gun Charters, Ultimate WaterSports, Venture Ningaloo, View Ningaloo, Warrior Princess Charters, Yardi Creek Boat Tours.</p> <p>Activities have the potential to impact Exmouth-based dive, tourism and charter operator’s functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	Yes
Gascoyne Recreational Marine Users	Gascoyne-based dive, tourism and charter operators	<p>Woodside has applied its methodology for ‘Recreational marine users and representative bodies’ under regulation 11A(1)(d).</p> <p>Reel Force Charters Pty Ltd, D & N Nominees Pty Ltd, Lyons Family Super Pty Ltd, Seafresh Holdings Pty Ltd, Eco-Abrolhos Pty Ltd, C Emery Fishing Pty Ltd, On Strike Charters (Wa) Pty Ltd, Melkit Pty Ltd, Maritime Engineering Services Pty Ltd, G. C. Bass Nominees Pty Ltd, Brefjen Nominees Pty Ltd, W.A Maritime Investments Pty Ltd, Blue Juice Tours Pty Ltd, Surefire Marine Services Pty Ltd, Makalee Pty Ltd, L & S Family Holdings Pty Ltd, Bondall Pty Ltd, Kw Marine Pty Ltd, Sharkbay Charters Pty Ltd, Bluecity Enterprises Pty Ltd, Jostan Holdings Pty Ltd, Monkey Mia Yacht Charters Pty Ltd, On Strike Charters (Wa) Pty Ltd, Rainfield Pty Ltd, Monster Sportfishing Adventures Pty Ltd, Lulamanzi Investments Pty Ltd, Millennial Charters Pty Ltd, Chapel Nominees Pty Ltd, Regalchoice Holdings Pty Ltd, Fawesome Expeditions Pty Ltd, On Strike Charters (Wa) Pty Ltd, The Great Escape Charter Company Pty Ltd, Aoa International Pty Ltd, Fire Tiger Pty Ltd.</p>	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>Activities have the potential to impact Gascoyne-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	
<p>Pilbara/Kimberley Recreational Marine Users</p>	<p>Pilbara/Kimberley-based dive, tourism and charter operators</p>	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 11A(1)(d).</p> <p>Willie Creek Pearl Farm Pty Ltd, Super Yachts Perth Pty Ltd, Bloor Street Investments Pty Ltd, Lugger Enterprises Pty Ltd, Eco-Abrolhos Pty Ltd, C Emery Fishing Pty Ltd, Discovery Holiday Parks Pty Limited, Kimberley Marine Pty Ltd, Coral Princess Cruises (Nq) Pty Ltd, Marine Agents Australia Pty Ltd, Maritime Engineering Services Pty Ltd, G. C. Bass Nominees Pty Ltd, Coastway Investments Pty Ltd, Kcc Group Pty Ltd, Cm Ventures Pty Ltd, Lombadina Aboriginal Corporation, Australian Port And Marine Services Pty Ltd, Hartley Motorcycles Pty Ltd, Humbug Fishing Pty Ltd, Brefjen Nominees Pty Ltd, Melkit Pty Ltd, W.A Maritime Investments Pty Ltd, Blue Juice Tours Pty Ltd, Kw Marine Pty Ltd, L & S Family Holdings Pty Ltd, Bondall Pty Ltd, Lake Argyle Cruises Pty Ltd, Sealife Charters Pty Ltd, Mal Miles Adventures Pty Ltd, Mackerel Islands Pty Ltd, Diversity Charter Company WA Pty Ltd, Split Tide Pty Ltd, North Star Cruises Australia Pty Ltd, Charter Express Pty Ltd, Sea 2 Pty Ltd, Hotel And Resort Investments Pty Ltd, L & S Family Holdings Pty Ltd, Down The Line Charters Pty Ltd, Rstg Pty Limited, Sealife Charters Pty Ltd, Coral Princess Cruises (Nq) Pty Ltd, Kimberley Quest Adventures Pty Ltd, Monster Sportfishing Adventures Pty Ltd, Ocean Charters Pty Ltd, Lulamanzi Investments Pty Ltd, Millennial Charters Pty Ltd, Chapel Nominees Pty Ltd, Fawesome Expeditions Pty Ltd, The Great Escape Charter Company Pty Ltd, Aoa International Pty Ltd, Kimberley Getaway Cruises Pty Ltd, King Sound Resort Hotel Pty.</p> <p>Activities have the potential to impact Pilbara/Kimberley-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	<p>Yes</p>
<p>Karratha Recreational Marine Users</p>	<p>Karratha-based dive, tourism and charter operators</p>	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 11A(1)(d).</p> <p>Nickol Bay Sport Fishing Club, Archipelago Adventures, Hampton Harbour Boat & Sailing Club, King Bay Game Fishing Club, Marine Rescue Dampier, Port Walcott Volunteer Marine Rescue, Port Walcott Yacht Club, Reef Seeker Charters, West Pilbara Volunteer Sea Search and Rescue Group.</p> <p>Activities have the potential to impact Karratha-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	<p>Yes</p>

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
West Coast Recreational Marine Users	West Coast-based dive, tourism and charter operators	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 11A(1)(d).</p> <p>Alltric Pty Ltd & Bluecity Enterprises Pty Ltd, Timberlane Nominees Pty Ltd Trading as Generation Fisheries, G. C. Bass Nominees Pty Ltd, Perth Diving Academy Pty Ltd, Reel Force Charters Pty Ltd, Temshore Pty Ltd, D & N Nominees Pty Ltd, Westerner Corporation Pty Ltd, Lugger Enterprises Pty Ltd, Eco-Abrolhos Pty Ltd, Riverblitz Pty Ltd, Third Reef Pty Ltd, Southern Salt Holdings Pty Ltd, Blue Water Adventure Charters Pty Ltd, Timberlane Nominees Pty Ltd, Allegretta Holdings Pty Ltd, Tgj Jj & La Parish, Maritime Engineering Services Pty Ltd, Kempton Fisheries Pty Ltd, Latitude Fisheries Pty Ltd, Quay Ventures Pty Ltd, Porlock Investments Pty Ltd, Brefjen Nominees Pty Ltd, Boarbarrell Pty Ltd, W.A Maritime Investments Pty Ltd, Indi Blue Pty Ltd, Crenset Nominees Pty Ltd, Blue Juice Tours Pty Ltd, Surefire Marine Services Pty Ltd, Makalee Pty Ltd, Kw Marine Pty Ltd, Viency Pty Ltd, L & S Family Holdings Pty Ltd, Bondall Pty Ltd, Bluecity Enterprises Pty Ltd, Pine Dene Nominees Pty Ltd, Perth Diving Academy Hillarys Pty Ltd, Kw Marine Pty Ltd, Sharkbay Charters Pty Ltd, Biwal Pty Ltd Trading As Wallabi Carting, North Star Cruises Australia Pty Ltd, Kimble Gresham Sinclair Wheatley, Western Blue Dive Pty Ltd, El Alauron Pty Ltd, Bondall Marketing Pty Ltd, Jostan Holdings Pty Ltd, Johnson Nominees Super Pty Ltd, Avanova Pty Ltd, Discovery Iii Pty Ltd, Abbey Bay Pty Ltd, Petara Pty Ltd, Rogue Seas Pty Ltd, Lulamanzi Investments Pty Ltd, Jayson Fishing Company (WA) Pty Ltd, Reefwalker Pty Ltd, Millennial Charters Pty Ltd, Quay Ventures Pty Ltd, Chapel Nominees Pty Ltd, Aquatic Adventures (Wa) Pty Ltd, The Great Escape Charter Company Pty Ltd, Aoa International Pty Ltd, Punchline Pty Ltd Trading As Karma Charters & Dorre Island Fishing Company Kybret Pty Ltd</p> <p>Activities have the potential to impact West Coast-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	Yes
Recfishwest	Represents the interests of recreational fishers in WA.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 11A(1)(d).</p> <p>Activities have the potential to impact recreational fishers' functions, interests or activities due to the location offshore and there has been recorded charter effort in the EMBA in the past 5 years.</p>	Yes
Marine Tourism WA	Represents the interests of marine tourism in WA.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 11A(1)(d).</p> <p>Activities have the potential to impact recreational fishers' functions, interests or activities due to the location offshore and there has been recorded charter effort in the EMBA in the past 5 years.</p>	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
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 11A(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
<i>Titleholders and Operators</i>			
Chevron Australia	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Western Gas	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Exxon Mobil Australia Resources Company	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Shell Australia	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
BP Developments Australia	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Carnarvon Energy	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Osaka Gas Gorgon	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Tokyo Gas Gorgon	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
JERA Gorgon	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
PE Wheatstone	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Kyushu Electric Wheatstone	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Eni Australia	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Finder Energy (Finder No 9)	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
KUFPEC	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Santos NA Energy Holdings / Santos Ltd / Santos WA Northwest / Santos Offshore / Santos WA Southwest / Santos (BOL) / Santos WA PVG	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 11A(1)(d). Titleholder or Operator's permit areas overlaps the EMBA.	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
TGS – NOPEX Geophysical Company	Titleholder or Operator	Woodside has applied its methodology for ‘Titleholders and Operators’ under regulation 11A(1)(d). Titleholder or Operator’s permit areas overlaps the EMBA.	Yes
Sapura OMV Upstream (WA) Pty Ltd / OMV Australia	Titleholder or Operator	Woodside has applied its methodology for ‘Titleholders and Operators’ under regulation 11A(1)(d). Titleholder or Operator’s permit areas overlaps the EMBA.	Yes
KATO Energy / KATO Corowa	Titleholder or Operator	Woodside has applied its methodology for ‘Titleholders and Operators’ under regulation 11A(1)(d). Titleholder or Operator’s permit areas overlaps the EMBA.	Yes
INPEX Alpha	Titleholder or Operator	Woodside has applied its methodology for ‘Titleholders and Operators’ under regulation 11A(1)(d). Titleholder or Operator’s permit areas overlaps the EMBA.	Yes
Fugro Exploration	Titleholder or Operator	Woodside has applied its methodology for ‘Titleholders and Operators’ under regulation 11A(1)(d). Titleholder or Operator’s permit areas overlaps the EMBA.	Yes
JX Nippon O&G Exploration (Australia)	Titleholder or Operator	Woodside has applied its methodology for ‘Titleholders and Operators’ under regulation 11A(1)(d). Titleholder or Operator’s permit areas overlaps the EMBA.	Yes
Peak Industry Representative Bodies			
AEP (formerly APPEA)	Represents the interests of oil and gas explorers and producers in Australia.	Woodside has applied its methodology for ‘Peak Industry Representative bodies’ under regulation 11A(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			
Murujuga Aboriginal Corporation (MAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for ‘Traditional Custodians and Nominated Representative Corporations’ under regulation 11A(1)(d).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>MAC is the Nominated Representative Corporation under the Burrup and Maitland Industrial Estates Agreement (BMIEA), which is coastally adjacent to the EMBA. The EMBA does not overlap the Murujuga National Park.</p> <p>MAC was established to represent the members of competing Native Title claims over Murujuga, collectively known as the Ngarda Ngarli and comprising Mardudhunera, Ngarluma, Yaburara, Yindjibarndi and Wong-Goo-Tt-Oo people. The determination of the competing Native Title claims resulted in no native title being found over the lands subject to the BMIEA or below the low water mark.</p> <p>MAC also owns and co-manages the Murujuga National Park, is responsible for the Dampier Archipelago National Heritage Place and is progressing the World Heritage nomination of the Murujuga Cultural Landscape.</p>	
<p>Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)</p>	<p>Representative Aboriginal Corporation</p>	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).</p> <p>The Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People native title claim overlaps the EMBA, which the Baiyungu, Thalanyji and Yinggarda people are party to. The NTGAC and Yinggarda Aboriginal Corporation (YAC) are the Registered Native Title Body Corporates holding native title on behalf of the Baiyungu, Thalanyji and Yinggarda people.</p> <p>The NTGAC is also party, with the WA State Government, to the Ningaloo Conservation Estate Indigenous Land Use Agreement (the ILUA), which overlaps the EMBA. The NTGAC is responsible for the joint management of the inner Ningaloo Marine Park (State Waters), the Cape Range National Park and new conservation areas extending along the Ningaloo Coast, which runs in parallel to the outer Ningaloo Marine Park in Commonwealth waters.</p> <p>The NTGAC is also party to the Gnarlou ILUA, which is coastally adjacent to the EMBA.</p> <p>The NTGAC's nominated representative is the Yamatji Marlpa Aboriginal Corporation (YMAC) and the NTGAC executive officer and contact officer pursuant to the Corporations (Aboriginal and Torres Strait Islander) Act 2006 is employed by YMAC. Woodside has therefore consulted the NTGAC, via YMAC.</p>	<p>Yes</p>
<p>Buurabalayji Thalanyji Aboriginal Corporation (BTAC)</p>	<p>Representative Aboriginal Corporation</p>	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).</p>	<p>Yes</p>

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>The Thalanyji native title claim, for which BTAC is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>BTAC is also party to the Macedon ILUA which overlaps the EMBA.</p>	
Yinggarda Aboriginal Corporation (YAC)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).</p> <p>The Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People native title claim overlaps the EMBA, which the Baiyungu, Thalanyji and Yinggarda people are party to. The NTGAC and Yinggarda Aboriginal Corporation (YAC) are the Registered Native Title Body Corporates holding native title on behalf of the Baiyungu, Thalanyji and Yinggarda people.</p> <p>The YAC is party to the Quobba – Yinggarda Pastoral ILUA and Brickhouse and Yinggarda Aboriginal Corporation ILUA, which are 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.</p> <p>Woodside was advised that as of late April 2023, the nominated representative for YAC was now Gumala Aboriginal Corporation.</p>	Yes
Kariyarra Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).</p> <p>The Kariyarra native title claim does not overlap the EMBA. The claim, for which the Kariyarra Aboriginal Corporation is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA.</p> <p>The Kariyarra Aboriginal Corporation is party to the Kariyarra and State ILUA, which is coastally adjacent to the EMBA.</p>	Yes
Wirrawandi Aboriginal Corporation (WAC)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).</p> <p>The Yaburara & Mardudhunera People native title claim does not overlap the EMBA. The claim, for which WAC is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA.</p>	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		WAC is party to the Cape Preston Project Deed (YM Mardie ILUA), Cape Preston West Export Facility and KM & YM Indigenous Land Use Agreement 2018, which are coastally adjacent to the EMBA.	
Robe River Kuruma Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d). The Robe River Kuruma Aboriginal Corporation is party to the KM & YM Indigenous Land Use Agreement 2018 and RTIO Kuruma Marthudunera People ILUA, which are coastally adjacent to the EMBA.	Yes
Ngarluma Aboriginal Corporation (NAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d). The Ngarluma People native title claim does not overlap the EMBA. The claim, for which NAC is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA. The Ngarluma/Yindjibarndi People native title claim does not overlap the EMBA. The claim, for which NAC and the Yindjibarndi Aboriginal Corporation are the Registered Native Title Body Corporates, is coastally adjacent to the EMBA. NAC is also party to the Anketell Port, Infrastructure Corridor and Industrial Estates Agreement and RTIO Ngarluma Indigenous Land Use Agreement (Body Corporate Agreement), which are coastally adjacent to the EMBA.	Yes
Yindjibarndi Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d). The Ngarluma/Yindjibarndi People native title claim does not overlap the EMBA. The claim, for which NAC and the Yindjibarndi Aboriginal Corporation are the Registered Native Title Body Corporates, is coastally adjacent to the EMBA. Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d). The Malgana Part A native title claim does not overlap the EMBA. The claim, for which the Malgana Aboriginal Corporation is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA. The Nanda People Part B, Malgana 2 and Malgana 3 native title claim does not overlap the EMBA. The claim, for which the Malgana Aboriginal Corporation and	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>Nanda Aboriginal Corporation are the Registered Native Title Body Corporates, is coastally adjacent to the EMBA.</p> <p>The Malgana Aboriginal Corporation is also party to the Malgana Tamala Pastoral Lease Agreement, Malgana Woodleigh Carbla Pastoral Lease Agreement and Malgana Wooramel Pastoral Lease Agreement, which are coastally adjacent to the EMBA.</p>	
Malgana Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).</p> <p>The Malgana Part A native title claim does not overlap the EMBA. The claim, for which the Malgana Aboriginal Corporation is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA.</p> <p>The Nanda People Part B, Malgana 2 and Malgana 3 native title claim does not overlap the EMBA. The claim, for which the Malgana Aboriginal Corporation and Nanda Aboriginal Corporation are the Registered Native Title Body Corporates, is coastally adjacent to the EMBA.</p> <p>The Malgana Aboriginal Corporation is also party to the Malgana Tamala Pastoral Lease Agreement, Malgana Woodleigh Carbla Pastoral Lease Agreement and Malgana Wooramel Pastoral Lease Agreement, which are coastally adjacent to the EMBA.</p>	Yes
Nanda Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).</p> <p>The Nanda People and Nanda #2 native title claim does not overlap the EMBA. The claim, for which the Nanda Aboriginal Corporation is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA.</p> <p>The Nanda People Part B, Malgana 2 and Malgana 3 native title claim does not overlap the EMBA. The claim, for which the Malgana Aboriginal Corporation and Nanda Aboriginal Corporation are the Registered Native Title Body Corporates, is coastally adjacent to the EMBA.</p>	Yes
Bundi Yamatji Aboriginal Corporation (BYAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>The Yamatji Nation native title claim does not overlap the EMBA. The claim, for which the Bundi Yamatji Aboriginal Corporation is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA.</p> <p>The Bundi Yamatji Aboriginal Corporation is party to the Yamatji Nation Agreement, which is coastally adjacent to the EMBA.</p>	
Native Title Representative Bodies			
Yamatji Marlpa Aboriginal Corporation (YMAC)	Native Title Representative Body	<p>Woodside has applied its methodology for 'Native Title Representative Bodies' under regulation 11A(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 but exist to assist native title claimants and holders.</p> <p>The NTGAC and Nanda Aboriginal Corporation's nominated representative is YMAC. Woodside has therefore consulted the NTGAC and Nanda Aboriginal Corporation via YMAC.</p> <p>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>	Yes
Self-identified First Nations groups			
Ngarluma Yindjibarndi Foundation Ltd (NYFL)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 11A(1)(d).</p> <p>The Ngarluma and Yindjibarndi People, the NWS JVs and Woodside entered into an agreement on 22 December 1998 (Agreement).</p>	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>NYFL was subsequently incorporated under the terms of the Agreement to act as trustee for the trust established to benefit the Ngarluma and Yindjibarndi People and the Roebourne Aboriginal Community.</p> <p>Subsequent to that, the Ngarluma people settled their native title claim and established their nominated representative corporation, the Ngarluma Aboriginal Corporation (PBC); and the Yindjibarndi people settled their native title claim and established their nominated representative corporation, the Yindjibarndi Aboriginal Corporation (PBC). The Ngarluma Aboriginal Corporation and the Yindjibarndi Aboriginal Corporation are the appropriate representative bodies for consultation in relation to cultural interests.</p> <p>NYFL's functions may be relevant to the proposed activity in relation to its functions under the Agreement.</p>	
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 11A(1)(d).</p> <p>There is known shipwrecks overlapping the EMBA which the Western Australian Museum may be responsible for.</p>	Yes
Local government and community representative groups or organisations			
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 11A(1)(d).</p> <p>The Shire of Exmouth's area of responsibility overlaps the EMBA.</p>	Yes
Shire of Ashburton	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Onslow, Pannawonica, Paraburdoo and Tom Price.	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 11A(1)(d).</p> <p>The Shire of Ashburton's area of responsibility overlaps the EMBA.</p>	Yes
Shire of Carnarvon	Local government governed by the <i>Local Government Act 1995</i>	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 11A(1)(d).	Yes

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
	<p>representing the suburbs and localities of Babbage Island, Brockman, Browns Range, Carnarvon, Coral Bay, East Carnarvon, Greys Plain, Ingaarda, Kingsford, Morgantown, North Plantations, South Carnarvon, South Plantations.</p>	<p>The Shire of Carnarvon's area of responsibility overlaps the EMBA.</p>	
<p>Exmouth Community Liaison Group (CLG)</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 	<p>The Exmouth CLG represents the interests of a range of local government, industry and community organisations in relation to oil and gas matters in the Exmouth region.</p>	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 11A(1)(d).</p> <p>The Exmouth CLG's area of responsibility under its terms of reference overlaps the EMBA.</p>	<p>Yes</p>

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
<ul style="list-style-type: none"> ▪ Exmouth Volunteer Marine Rescue ▪ Fat Marine ▪ Gascoyne Development Commission ▪ Gun Marine Services ▪ Ningaloo Lodge ▪ Offshore Unlimited ▪ Shire of Exmouth ▪ BHP Petroleum (Woodside) ▪ Santos ▪ Community Member 			
<p>Onslow Chamber of Commerce and Industry</p>	<p>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.</p>	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 11A(1)(d). The Onslow Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.</p>	<p>Yes</p>
<p>Carnarvon Chamber of Commerce and Industry</p>	<p>Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Carnarvon and surrounding areas.</p>	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 11A(1)(d). The Carnarvon Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.</p>	<p>Yes</p>
<p>Other Non-government Groups or Organisations</p>			
<p>Australian Conservation Foundation (ACF)</p>	<p>Non-government organisation</p>	<p>Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 11A(1)(d) to determine ACF's relevance for the proposed activity.</p>	<p>No</p>

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
		<p>Woodside has assessed that ACF's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2).</p> <p>Woodside chose to contact ACF at its discretion in line with Section 5.3.4.</p>	
<p>Conservation Council of Western Australia (CCWA)</p>	<p>Non-government organisation</p>	<p>Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 11A(1)(d) to determine CCWA's relevance for the proposed activity.</p> <p>Woodside has assessed that CCWA's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2).</p> <p>Woodside chose to contact CCWA at its discretion in line with Section 5.3.4.</p>	<p>No</p>
<p>Greenpeace Australia Pacific (GAP)</p>	<p>Non-government organisation</p>	<p>Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 11A(1)(d) to determine GAP's relevance for the proposed activity.</p> <p>Woodside has assessed that GAP'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 5.2).</p>	<p>Yes</p>
<p>Friends of the Earth Australia</p>	<p>Non-government organisation</p>	<p>Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 11A(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 5.2).</p>	<p>Yes</p>
<p>Maritime Union of Australia (MUA)</p>	<p>Union representing members in the maritime industries</p>	<p>Woodside has applied its methodology for 'Additional persons' under regulation 11A(1)(d) to determine the 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 5.2).</p>	<p>Yes</p>

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
<i>Research Institutes and Local Conservation Groups or Organisations</i>			
Cape Conservation Group (CCG)	Local conservation group focused on protecting the terrestrial and marine environment of the North West Cape	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 11A(1)(d) to determine CCG's relevance for the proposed activity. CCG's conservation activities have the potential to intersect with the EMBA as the EMBA overlaps North West Cape.	Yes
Protect Ningaloo	Local conservation group focused on protecting the Exmouth Gulf and Ningaloo Reef and Cape Range	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 11A(1)(d) to determine CCG's relevance for the proposed activity. Protect Ningaloo's conservation activities have the potential to intersect with the EMBA as the EMBA overlaps North West Cape and Ningaloo Reef.	Yes
University of Western Australia (UWA)	Research institute	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 11A(1)(d) to determine UWA Ocean Institute's relevance for the proposed activity. There is no known research being undertaken by the UWA that intersects within the EMBA. Woodside chose to contact UWA at its discretion in line with Section 5.3.4 .	No
Western Australian Marine Science Institution (WAMSI)	Research institute	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 11A(1)(d) to determine WAMSI's relevance for the proposed activity. There is no known research being undertaken by the WAMSI that intersects within the EMBA. Woodside chose to contact WAMSI at its discretion in line with Section 5.3.4 .	No
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Research institute	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 11A(1)(d) to determine CSIRO's relevance for the proposed activity. There is no known research being undertaken by the CSIRO that intersects within the EMBA. Woodside chose to contact SIRO at its discretion in line with Section 5.3.4 .	No

Person or Organisation	Summary of Responsibilities and/or Functions, Interests or Activities	Assessment of Relevance	Relevant Person
Australian Institute of Marine Science (AIMS)	Research institute	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 11A(1)(d) to determine AIMS's relevance for the proposed activity. There is known research being undertaken by AIMS that intersects within the EMBA.	Yes

5.9 Consultation Activities and Additional Engagement

Woodside has been conducting extensive consultation with relevant persons and other parties for this EP since March 2022, when consultation for the Stybarrow Decommissioning and Field Management Environment Plan commenced with interested and affected stakeholders as part of a planned, integrated and consistent approach to stakeholder engagement for Woodside's proposed activities. 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 the national, state and relevant local newspapers including The Australian, The West Australian, Pilbara News, Midwest Times, North West Telegraph (15 February 2023) and Geraldton Times (17 February 2023) (see **Appendix F, reference 2.53**).
- 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 5.3.4**), 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 1.32**).
- An activity update Consultation Information Sheet was provided to relevant persons and persons Woodside chose to contact (see **Section 5.3.4**), which included an update regarding planned activities, information regarding the EMBA 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 (March 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 2.15, reference 2.15.1**). 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 5.2**).
- 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 5.3.4**) 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 2.59**).

5.9.1 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 2.60**) 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 2.61**).
- 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 2.63**), 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 2.62**), geotargeting a social media campaign in Karratha and surrounding areas and posting the event details on its Facebook page (**Appendix F, reference 2.64**).
 - 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 the Stybarrow Plug and Abandonment Environment Plan. 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 2.66**).
- 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 2.67**).
- 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 2.68**).
 - 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 2.70**). 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 2.71**). 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.

5.9.2 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 5.5**).

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 2.54**) 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 (**Appendix F, reference 2.59**).
 - The wide-reaching campaign brought the proposed activity to the attention of persons who may be interested and advised persons or organisations how they can find out about Woodside's proposed activities by visiting Woodside's website, which details the intent of consultation with relevant persons under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth). The reach of this campaign is shown in **Appendix F, reference 2.59**), providing the opportunity to consult via over 139,000 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.

6 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 6-1**). The process includes incorporating historic stakeholder and legal and environmental monitoring data for the relevant environmental impacts.

6.1 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 3** 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 3**), the existing environment (**Section 4**) and the outcomes of Woodside's consultation process (**Section 5**).

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 6-1** 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.

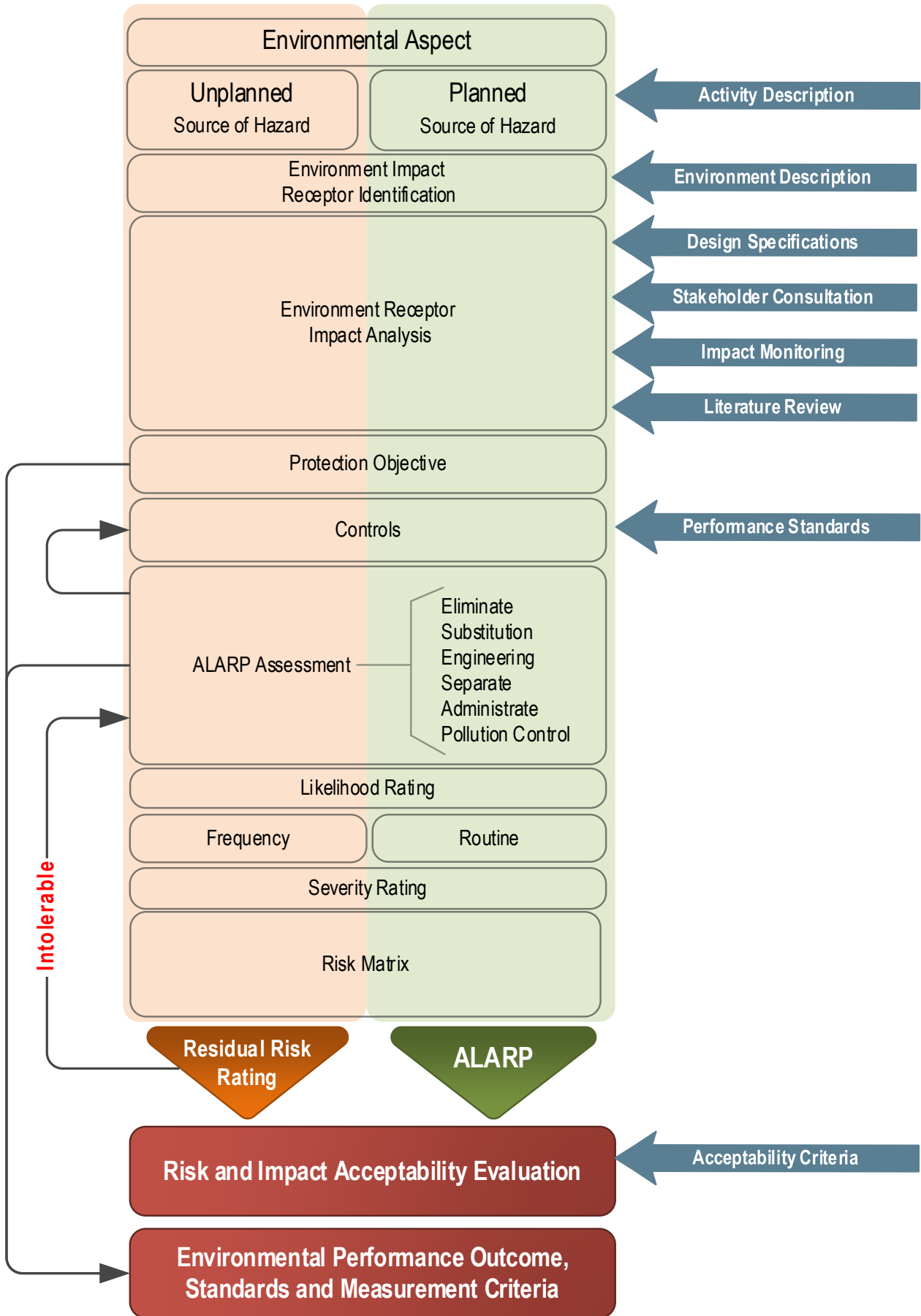


Figure 6-1: EP integrated impact and risk assessment process

6.1.1 Decision Context

Consistent with the *Guidance on Risk Related Decision Making* (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 6.2**) and acceptable levels (**Section 6.3**). This approach implies a level of proportionality wherein the principles of decision-making applied to each hazard are proportionate to the acceptability of environmental risk of that hazard.

The decision-making principles described in **Table 6-1** are consistent with the precautionary principle (as defined in the EPBC Act) and provide assurance that the environmental impacts and risks are managed to a level that is ALARP and acceptable.

Table 6-1: Risk-related decision-making framework

Decision Type	Description
Decision type A	<p>Woodside considers lower-order (or ‘Type A’) impacts or risks as those that:</p> <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 6-3) ▪ have a ‘likelihood’ for unplanned events that is either ‘unlikely’ or ‘highly unlikely’ based upon the likelihood definitions (Table 6-4).
Decision type B	<p>Woodside considers higher-order (or ‘Type B’) impacts or risks as those that:</p> <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 severity level definition (Table 6-3) ▪ have a ‘likelihood’ for unplanned events that is considered ‘probable’ to ‘highly likely’ based upon the likelihood definitions (Table 6-4).
Decision type C	<p>Woodside considers highest-order (or ‘Type C’) impacts or risks as those that:</p> <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 severity level definition (Table 6-3) ▪ have a ‘likelihood’ for unplanned events that is considered ‘probable’ to ‘highly likely’ based upon the likelihood definitions (Table 6-4).

6.1.2 Environmental Impact Analysis

The environmental impact analysis is based on the environmental receptors identified in **Section 4**. 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.

6.1.3 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) Risk Matrix, which is consistent with the severity definitions (**Table 6-3**), 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.

6.1.4 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.

Likelihood and potential severity ratings were assigned in accordance with the Woodside (PetDW) HSE Risk Matrix (**Table 6-2**, **Table 6-3** and **Table 6-4**), 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, taking into account any mitigative controls in place to reduce the impact.

Table 6-2: Woodside (PetDW) 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 6-3: 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 6-4: 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

6.2 Demonstration of As Low As Reasonably Practicable

Regulation 10A(b) of the Environment Regulations requires demonstration that the environmental impacts and risks of the activity will be reduced to ALARP.

6.2.1 Planned Activity and Unplanned Event As Low As Reasonably Practicable Evaluation

This section details the process for demonstrating ALARP for both planned routine operations and unplanned events. **Table 6-5** provides a description of how Woodside demonstrates different impacts and risks are managed to a level that is ALARP based on their decision types.

Table 6-5: Summary of the criteria used for ALARP demonstration

Decision Type	Demonstration of ALARP Description
Decision type A	<ul style="list-style-type: none"> ▪ If 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 any and 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 6-2**:

- 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.

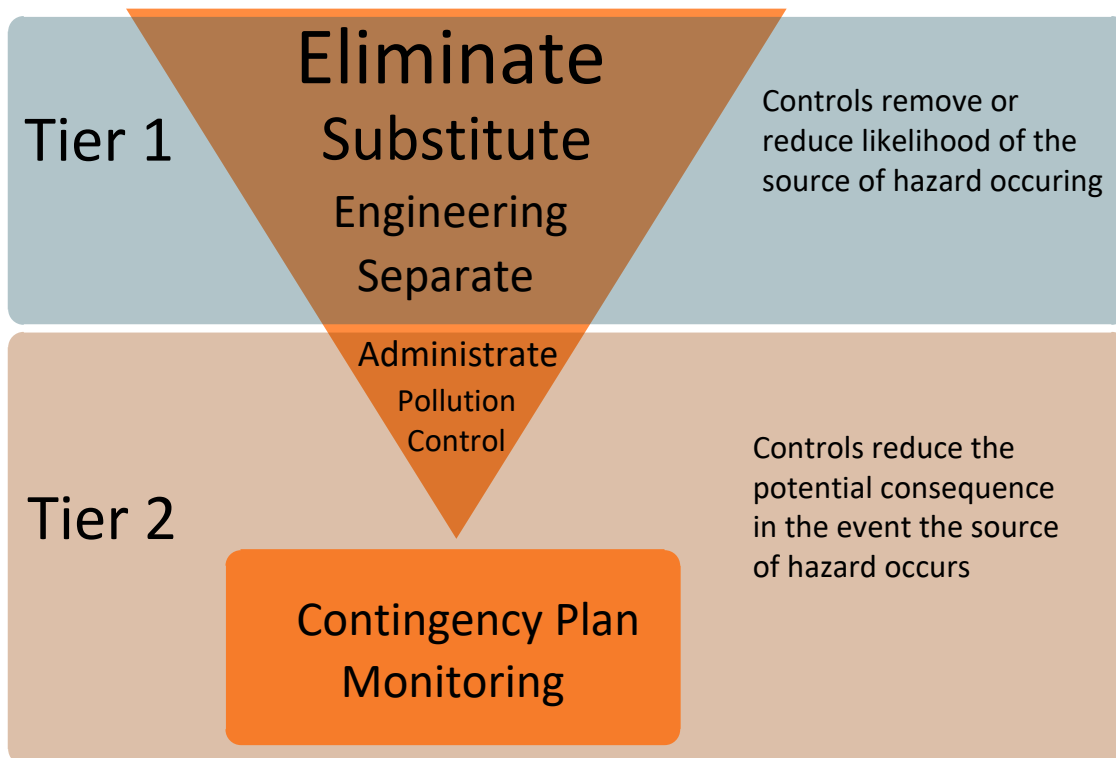


Figure 6-2: Hierarchy of control framework

6.2.2 Spill Response Strategy Effectiveness and As Low As Reasonably Practicable

In developing the environmental performance standards that apply to each response strategy, Woodside has considered the level of performance that is reasonable to achieve for each control measure and the ‘effectiveness’ of the control measures.

The effectiveness of the control measures is assessed by considering:

- availability: the status of availability to Woodside
- functionality: a measure of functional performance
- reliability: the probability that the control will function correctly
- survivability: the potential of the control measure to survive an incident
- independence/compatibility: the degree of reliance on other systems and/ or controls, in order to perform its function.

These criteria follow the definitions in NOPSEMA’s Control Measures and Performance Standards Guidance Note (NOPSEMA, 2020a), with ranking provided in **Table 6-6**.

Table 6-6: Criteria for ranking spill response effectiveness

Evaluation Criteria	Response Effectiveness Ranking	
	Low	High
Availability	Woodside does not have equipment and resources on standby, or contracts, arrangements, and Memorandums of Understanding in place for providing equipment and resources. Woodside has internal processes and procedures in place to expedite timely provision of equipment and resources.	Woodside has equipment and resources on standby, or contracts, arrangements or Memorandums of Understanding in place for providing equipment and resources.

Evaluation Criteria	Response Effectiveness Ranking	
	Low	High
Functionality	Implementation of the control measure does not greatly reduce the risk and impact.	Implementation of the control measure has material difference in reducing the risk and impact.
Reliability	The control measure is not reliable (for example, has not been tried and tested in Australian waters) or low assurance can be given to its success rate and effectiveness.	The control measure is reliable (for example, has been tried and tested in Australian waters) or high assurance can be given to its success rate and effectiveness.
Survivability	The control measure has a low operating timeframe and will need to be replaced regularly throughout its operation period in order to maintain its effectiveness.	The control has a high operating timeframe and will not need to be replaced regularly throughout its operation period in order to maintain its effectiveness.
Independence / Compatibility	The control relies on other control measures being in place or the control measure is incompatible with other control measures in place.	The control does not depend on other control measures being in place or the control measure can be implemented in unison with other control measures.

Each control was then evaluated, considering the environmental benefit gained from implementation compared with its practicability (in other words, control effectiveness, cost, response capacity and implementation time) to determine if the control was either:

- accept and implement, or
- reject.

This traffic light system is used in the ALARP demonstration tables where the ‘do nothing’ option is rejected, along with a scalable option that generally involves mobilising spill response resources and equipment to site and on standby. Accepted controls in all the ALARP demonstration tables indicate those that would be implemented as part of the response.

Applying principles similar to those presented within the United Kingdom Offshore Operators Association Framework for Risk Related Decision Support (Oil and Gas UK, 2014), as described in **Section 6.1.1** of this EP, Woodside has adopted the following criteria for determining spill response strategy preparedness that present a lower-order risk compared to those that present a higher-order risk:

- A spill response strategy is determined to present a lower-order risk where all controls have been ranked as ‘high’ according to the criteria for ranking spill response effectiveness (These criteria follow the definitions in NOPSEMA’s *Control Measures and Performance Standards Guidance Note* (NOPSEMA, 2020a), with ranking provided in Table 6-1 and additional controls would unlikely reduce potential environmental impacts and risks further. As such, Woodside has considered ‘Type A’ spill response strategies to be managed to ALARP.
- A spill response strategy is determined to present a higher-order risk where one or more controls have been ranked as ‘low’ according to the criteria for ranking spill response effectiveness and additional controls would likely reduce potential environmental impacts and risks further. As such, alternate, additional, or improved controls should be proposed in an attempt to increase their effectiveness ranking to ‘high’. Where improved controls have been identified but are not readily available, an improvement plan has been developed to meet the oil spill response need before performing the activity.

Woodside’s ALARP assessment for resourcing for each spill response strategy is presented within **Appendix E**.

6.3 Demonstration of Acceptability

Regulation 10A(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 6.1.1**, ensuring consistency with the precautionary principle when considering the acceptable levels of impact and risk caused by the activity.

Demonstrating acceptability for lower-order ('Type A') impacts or risks

When an impact or risk has been evaluated as 'lower-order' based upon the Decision Context detailed in **Section 6.1.1**, and identified regulatory, corporate or industry good practice controls consistent with relevant actions prescribed in listed species recovery plans, conservation advice and threat abatement plans are implemented, and the application of these controls clearly indicate the aspect-specific Environmental Performance Outcomes (EPOs) can be achieved, Woodside considers the impact or risk to be managed to an acceptable level.

Demonstrating acceptability for lower-order ('Type A') and higher-order ('Type B') impacts or risks

When an impact or risk has been evaluated as 'higher-order' based upon the Decision Context detailed in **Section 6.1.1**, 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 2.1.2**), 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.

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 6.1.1**, 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 PetDW risk matrix (**Table 6-2**).

6.4 Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

Regulation 10A(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 (described in the risk assessment presented in **Sections 7** and **8**) and considering available control options (**Sections 7** and **8**), and the views of interested parties (**Section 5**). The resulting outcomes and standards must be measurable where practicable and consistent with Woodside Our Values (**0**).

6.4.1 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.

6.4.2 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.

6.4.3 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 **Sections 7** and **8** and have been consolidated in the Environmental Performance section of this EP.

EPOs, EPSs, and MCs relating to oil spill response preparedness are provided in **Section 10**.

EPOs, EPSs, and MCs relating to Incident Management Team (IMT) capability and competency are detailed within the Incident Management Team Capability Assessment (AOHSE-ER-0071).

EPOs, EPSs, and MCs for the effectiveness of the response strategy implementation are provided in **Section 10**.

7 Environmental Impact Assessment and Evaluation: Planned Activities

The purpose of this section is to address the requirements of Regulations 13(5) and 13(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 7-1 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 7-1: 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	Onshore (Indirect impacts)	Severity Factor	Likelihood Factor	Residual Risk	Acceptability
Physical Presence – Section 7.1																	
Presence of project vessels during petroleum activity										x	x	x		30	N/A	-	Tolerable
Presence of subsea infrastructure										x				30	N/A	-	Tolerable
Light Emissions – Section 7.2																	
Artificial light from project vessels	x	x	x	x										10	N/A	-	Tolerable
Noise Emissions – Section 7.3																	
Generation of underwater noise from the project vessels during normal operations.	x	x	x											30	N/A	-	Tolerable
Generation of noise from subsea infrastructure and wellheads cutting equipment.	x	x	x											10	N/A	-	Tolerable
Generation of noise from acoustic survey equipment, including MBES and SSS from ROV used for surveying subsea infrastructure.	x	x	x											10	N/A	-	Tolerable
Atmospheric Emissions – Section 7.4																	
Atmospheric emissions from vessel engines and generators, and incinerators on vessel.														10	N/A	-	Tolerable
Routine Vessel Discharges – Section 7.5																	
Routine planned discharge of sewage, grey water, putrescible waste, brine, cooling water, deck drainage and bilge water to the marine environment from project vessels.						x								10	N/A	-	Tolerable
Seabed Disturbance – Section 7.6																	
Subsea infrastructure removal, including temporary setdown of infrastructure on the seabed.					x									10	N/A	-	Tolerable
ROV use during subsea infrastructure removal and field management.					x									10	N/A	-	Tolerable
Subsea Discharges – Section 7.7																	
Discharge of seawater						x								10	N/A	-	Tolerable
Discharge of chemicals during removal of subsea infrastructure and wellheads.						x								10	N/A	-	Tolerable
Use and discharge of marine growth removal chemicals.						x								10	N/A	-	Tolerable
Waste Generation – Section 7.8																	
Waste (hazardous and non-hazardous) generated during vessel activities													x	10	N/A	-	Tolerable
Recovered subsea infrastructure													x	10	N/A	-	Tolerable

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	Onshore (Indirect impacts)	Severity Factor	Likelihood Factor	Residual Risk	Acceptability
<i>Hydrocarbon Spill Response Operations – Section 7.9</i>																	
Hazards associated with implementation of response	x	x	x	x		x				x	x	x	x	10	N/A	-	Tolerable

7.1 Physical Presence

7.1.1 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 project vessels and aircraft during petroleum activity	Interaction with or displacement of other marine users (such as commercial shipping, commercial fishing or other third-party vessels).	30	N/A	-	Type A Low Order Impact	Tolerable
	Presence of subsea infrastructure	Interaction with or displacement of other marine users (such as commercial fishing).	30	N/A	-	Type A Low Order Impact	Tolerable

7.1.2 Source of Hazard

7.1.2.1 Project Vessels

Project vessels will be on station within the operational area for the duration of the infrastructure removal activities and non-routine field management. A temporary 500 m exclusion zone will be maintained around the project vessels during operations. Marine users are requested to avoid this area during the activity to ensure the safety of the project vessels and third-party vessels.

Typically, only one general support vessel will be performing field management in the operational area at any time typically for a period of up to 15 days. Typically, two (but up to six) project vessels will be in the operational area during subsea infrastructure removal activities. The removal activities may be conducted as a single continuous campaign or split into two or more discrete campaigns. The subsea infrastructure removal activities are expected to be conducted over a period of around six months in total (refer **Section 3.3**). Infrastructure removal and non-routine field management activities may be conducted at the same time as plug and abandonment activities. Plug and abandonment activities are described in the Stybarrow Plug and Abandonment EP.

The physical presence of the project vessels in the operational area and associated 500 m radius exclusion zone has the potential to cause interference with or displacement of other marine users, including commercial shipping and commercial fishing.

7.1.2.2 Subsea Infrastructure

Subsea infrastructure in the field is included in **Table 3-5**. A series of gazetted petroleum safety zones (PSZs) exist around the as-built DTM buoy location, DTM mooring anchors and the drill centres, which persist until they PSZ revoked. The locations of petroleum safety zones are marked on nautical charts maintained by the AHO. The physical presence of the subsea infrastructure and the associated PSZs has the potential to cause interference with or displacement of other marine users. Note the PSZs were gazetted in 2007 and have been in force continuously since.

Up to 1 m of residual wellhead may be extend above the mudline if a diamond wire saw is used to remove the wellheads. No part of the wellheads will extend above the mudline if a mechanical internal cutting tool is used to remove the wellheads.

7.1.3 Environmental Impact Assessment

7.1.3.1 Commercial Fishing

Several managed fishery boundaries overlap the operational area, each of which is described in **Table 4-12**:

- Commonwealth fisheries:
 - Western Deep Water Trawl Fishery
 - Western Tuna and Billfish Fishery
 - Skipjack Tuna Fishery
- State fisheries
 - Pilbara Crab Fishery
 - Pilbara Line Fishery
 - West Coast Deep Sea Crustacean
 - Mackerel Fishery
 - Marine Aquarium
 - South West Coast Salmon

None of these fisheries are currently active in proximity to the operational area, with the operational area too deep to support fish resources targeted by these fisheries. Of these fisheries listed above, 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 typically greatest off the central west coast, with Carnarvon and Fremantle the major landing ports.

Environmental surveys in WA-32-L did not observe any demersal fish or crustaceans that are targeted by commercial fisheries.

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

Several state-managed fisheries overlap the operational area, however no landing in any of these commercial fisheries were recorded within the operational area between 2010 and 2020. None of the state fisheries overlapping the operational area used trawled gear (which has greater potential to become snagged on subsea infrastructure).

7.1.3.2 Commercial Shipping

There are no recognised shipping routes in or near the operational area, with the nearest shipping fairway designated by AMSA located to the west and north of the operational area (**Figure 4-21**). This fairway is approximately 21 km from the operational area at the closest point. While not mandatory, the use of the shipping fairways is strongly recommended by AMSA. Analysis of shipping traffic data indicates commercial vessels do use the general area, with most vessels in the area associated with the oil and gas industry (typically support and offtake vessels associated with FPSOs off North West Cape). In the very unlikely event commercial shipping vessels are present in or near the operational area, temporary displacement of the commercial shipping vessels would relate to the 500 m exclusion zone around the project vessels for the duration of the petroleum activity and the gazetted PSZs around the subsea infrastructure remaining in the field (refer **Figure 3-1**). Any impact is anticipated to be temporary and minor given the location of the operational area relative to shipping fairways.

The DTM and mooring support buoys are not navigation hazards as these structures sank to the seabed and all buoyancy chambers have imploded. With the prior removal of the riser buoyancy elements, there is no buoyant equipment within the Stybarrow field that may float to the surface and pose a navigation hazard.

Another operator conducting a petroleum activity in the local area, concurrently or sequentially, may lead to displacement of fishing vessels due to cumulative vessel presence. However, given the low levels of fishing effort at the field location, the low levels of other vessel use (e.g., shipping) and the small spatial extent of the operational area, impacts and displacement of other users from presence of cumulative vessels is considered temporary and minor.

7.1.3.3 Defence

The operational area lies within the NWSA, within which the DoD may undertake military exercises. Large scale exercises tend to be infrequent and are clearly communicated to other marine users by NOTMARs and civilian aviation by NOTAMs.

The Stybarrow field, and the associated PSZs, have been in place since production commenced in 2007. Woodside has consulted with the DoD regarding the Stybarrow field and the petroleum activities within the scope of this EP. This facilitates consideration of Woodside’s activities in the Stybarrow field when the DoD are planning their activities.

Given the nature and scale of defence activities in the region, the long-term presence of the Stybarrow field and the consultations undertaken by Woodside, interactions between vessels undertaking the petroleum activity and the DoD are not expected to occur.

7.1.3.4 Cumulative Impacts

There is potential for SIMOPs to occur with activities covered under this EP and other Woodside decommissioning activities within WA-32-L as described in **Section 3.5**. Typically, only one general support vessel will be performing field management in the operational area at any time typically for a period of up to 15 days. Two (but up to six) project vessels may be in the operational area during subsea infrastructure removal activities (noting typically a maximum of two will be on DP at any one time). The subsea infrastructure removal activities are expected to be conducted over a period of around six months (refer **Section 3.4**). Additionally subsea infrastructure removal activities may occur concurrently with Plug and Abandonment (P&A) activities (**Section 3.5, Figure 3-2**). Whilst any overlap with P&A activities are expected to be short in nature, cumulative impacts to other marine users have the. The cumulative impact of SIMOPS is considered unlikely to have any impact on other marine users due to:

- the very low levels of activities by other marine users within WA-32-L
- petroleum activities will be concentrated within the existing Petroleum Safety Zones within WA-32-L, which other marine users are required to avoid
- the expected short duration of SIMOPS (if required at all).

Another operator conducting a petroleum activity in the local area, concurrently or sequentially, may lead to displacement of fishing vessels due to cumulative vessel presence. However, given the low levels of fishing effort at the field location, the low levels of other vessel use (e.g., shipping) and the small spatial extent of the operational area, impacts and displacement of other users from presence of cumulative vessels is considered temporary and minor.

7.1.4 Demonstration of As Low As Reasonably Practicable

The ALARP process performed for the environmental aspect is summarised in **Table 7-2**. This process was completed as outlined in **Section 6.2** 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 7-2: Physical presence - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Eliminate use of vessels.	Reject	Control not considered feasible. The use of vessels is required to conduct the petroleum activities.	Not applicable
Reduce the exclusion zone around the vessels.	Reject	Reduces the area of displacement of other marine users; however, the size and implementation of the exclusion zone is a legislative requirement and cannot be reduced, therefore the control is not	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		feasible.	
Administrative			
<p>Project vessel compliant with navigation safety requirements including the Navigation Act 2012 and any subsequent Marine Orders (21 & 30), which specify:</p> <ul style="list-style-type: none"> ▪ navigation (including lighting, compass/radar), bridge and communication equipment will comply with appropriate marine navigation and vessel safety requirements ▪ Automatic Identification System (AIS) is fitted and maintained in accordance with Regulation 19-1 of Chapter V of SOLAS ▪ crew performing vessel bridge-watch will be qualified in accordance with AMSA Marine Order Part 3: Seagoing Qualifications or certified training equivalent 	Accept	<p>Legislative requirements to be followed which reduces the risk of third-party vessel interactions due to ensuring safety requirements are fulfilled and other marine users are aware of the presence of the project vessels.</p> <p>The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 1.1
Establishment of a 500 m safety exclusion zone around project vessels and communicated to marine users.	Accept	<p>Establishment of a 500 m petroleum safety zone around vessel conducting infrastructure removal activities reduces the likelihood of interaction with other marine users.</p> <p>The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 1.2
AHO notified of activity no less than four working weeks prior to undertaking the petroleum activity.	Accept	<p>Notification to AHO will enable them to generate navigation warnings.</p> <p>Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 1.3
Notify relevant fishing industry, government departments, representative bodies and licence holders of activities prior to commencement and upon completion of activities.	Accept	<p>Communicating the activities to other marine users ensures they are informed and aware, thereby reducing the likelihood of interfering with other marine users.</p> <p>Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 1.4
Notify DoD at least five	Accept	Notification was requested by DoD during	PS 1.5

Control Measure	Accept / Reject	Reason	Associated Performance Standards
weeks prior to the scheduled activity commencement date		consultation. Communicating the activities to other marine users ensures they are informed and aware, thereby reducing the likelihood of interfering with other marine users. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	
Notify AMSA JRCC of activities 24–48 hours of undertaking the petroleum activities	Accept	Communicating the activities to other marine users ensures they are informed and aware, thereby reducing the likelihood of interfering with other marine users. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.6
Maintain a Community Engagement Program by regular meetings with the Community Reference Group.	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 any cost sacrifice.	PS 1.7
Establish and maintain a publicly available interactive map which provides relevant persons with updated information on activities being conducted as part of the petroleum activity.	Accept	Interactive map provides additional alternative method for marine users to obtain information on the timing of activities, thereby reducing the likelihood. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.8
Removal of wellheads to reduce wellhead protrusion above mudline to 1 m or less.	Accept	Reducing the height of the wellhead as much as practicable decreases the likelihood of interactions with other users. The intended wellhead removal method (internal cutting tool) will remove the wellheads below the mudline. The contingency method (diamond wire saw) will leave some portion of the wellhead above the seabed. 1 m or less is the best performance that can reliably be achieved with available diamond wire saws. The control is feasible. Benefits outweigh the cost sacrifice.	PS 1.9
Reduce the exclusion zone around the vessels	Reject	Reduces the area of displacement of other marine users; however, the size and implementation of the exclusion zone is a legislative requirement and cannot be reduced, therefore the control is not feasible.	Not applicable
Eliminate potential for cumulative impacts by	Reject	SIMOPS may be required to comply with General Direction 833. Potential	Not applicable.

Control Measure	Accept / Reject	Reason	Associated Performance Standards
separating equipment removal and plug and abandonment activities in time or restricting the number of vessels in the operational area.		cumulative impacts of physical presence are minor. The cost of the control is grossly disproportionate to the environmental benefit.	

7.1.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 7-2**) that, when implemented, are considered to manage the impacts of the physical presence of the project vessels and subsea infrastructure on other marine users to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential for interaction with other marine users associated with the physical presence of the project vessels and subsea infrastructure. Additional reasonable control measures were identified in **Table 7-2** 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.

7.1.5 Demonstration of Acceptability

Given the adopted controls, the physical presence of the project vessels and subsea infrastructure will not result in potential impacts greater than temporary and minor displacement of other marine users, such as commercial shipping and fisheries. Further opportunities to reduce the impacts have been investigated in **Table 7-2**.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the physical presence of the project vessels and subsea infrastructure within the scope of this EP have been raised by relevant stakeholders. The environmental impacts meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social and equitable considerations.
- Precautionary principle: The physical presence aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The physical presence aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The physical presence aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.1.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 7-3: Environmental performance outcomes, performance standards and measurement criteria for physical presence - interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 1 No unplanned interactions between project vessels or Stybarrow infrastructure and other marine users</p>	<p>C 1.1 Project vessels compliant with navigation safety requirements including the Navigation Act 2012 and any subsequent Marine Orders (21, 27 & 30), which specify:</p> <ul style="list-style-type: none"> ▪ navigation (including lighting, compass/radar), bridge and communication equipment will comply with appropriate marine navigation and vessel safety requirements ▪ Automatic Identification System (AIS) is fitted and maintained in accordance with Regulation 19-1 of Chapter V of SOLAS ▪ crew performing vessel bridge-watch will be qualified in accordance with AMSA Marine Order Part 3: Seagoing Qualifications or certified training equivalent 	<p>PS 1.1 Project vessels compliant to the navigation safety requirements including the <i>Navigation Act 2012</i>, International Convention of the Safety of Life at Sea (SOLAS), Marine Order 30 and Marine Order 21.</p>	<p>MC 1.1.1 Marine assurance inspection records demonstrate compliance with standard maritime safety procedures</p>
	<p>C 1.2 Establishment of a 500 m safety exclusion zone around project vessels and communicated to marine users.</p>	<p>PS 1.2 No entry of unauthorised vessels within the 500 m safety exclusion zone.</p>	<p>MC 1.2.1 Records demonstrate breaches by unauthorised vessels within the PSZ are recorded.</p>
	<p>C 1.3 AHO notified of activity no less than four working weeks prior to undertaking the petroleum activity</p>	<p>PS 1.3 AHO notified of activities and movements to allow generation of navigation warnings (MSIN and NTM [including AUSCOAST warnings where relevant])</p>	<p>C 1.3.1 Consultation Records demonstrate that AHO has been notified prior to commencement of an activity to allow generation of navigation warnings.</p>

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<p>C 1.4 Notify relevant fishing industry government departments, representative bodies and licence holders of activities prior to commencement and upon completion of activities.</p>	<p>PS 1.4 AFMA, CFA, DCCEEW, WAFIC, DAFF-fisheries, Recfishwest and relevant Fishery Licence Holders notified prior to commencement and upon completion of activities.</p>	<p>MC 1.4.1 Consultation records demonstrate that AFMA, CFA, DCCEEW, WAFIC, DAFF- fisheries, Recfishwest and relevant Fishery Licence Holders have been notified prior to commencement and upon completion of activities.</p>
	<p>C 1.5 Notify DoD at least five weeks prior to the scheduled activity commencement date</p>	<p>PS 1.5 The DoD is notified at least five weeks before commencing the petroleum activity.</p>	<p>MC 1.5.1 Records demonstrate DoD were notified at least five weeks before commencement of the petroleum activity, as requested by DoD during consultation.</p>
	<p>C 1.6 Notify AMSA JRCC of activities 24–48 hours of undertaking the petroleum activities</p>	<p>PS 1.6 Notification to AMSA JRCC 24-48 hours prior to the scheduled commencement date.</p>	<p>MC 1.6.1 Consultation records demonstrate that AMSA JRCC has been notified prior to commencement of the activity within required timeframes.</p>
	<p>C 1.7 Maintain a Community Engagement Program by regular meetings with the Community Reference Group.</p>	<p>PS 1.7 Regular Engagement with the Community Reference Group through the Community Engagement Program for the duration of the petroleum activities.</p>	<p>MC 1.7.1 Consultation records demonstrate ongoing engagement with the Community Reference Group on the petroleum activities</p>
	<p>C 1.8 Establish and maintain a publicly available interactive map which provides stakeholders with updated information on activities being conducted as part of the petroleum activity.</p>	<p>PS 1.8 Activity interactive map established and maintained throughout activities.</p>	<p>MC 1.8.1 Records demonstrate interactive map was provided and available to stakeholders throughout activities.</p>

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<p>C 1.9 Cutting and removal of wellheads to reduce wellhead protrusion above mudline to 1 m or less.</p>	<p>PS 1.9 Remaining sections of wellheads will be 1 m or less above the mudline.</p>	<p>MC 1.9.1 Records demonstrate that wellheads are removed to 1 m or less above the mudline.</p>

7.2 Light Emissions

7.2.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Light emissions	Artificial light from project vessels	Light emissions (light spill and glow) from external lighting on the project vessels causing alterations to normal marine fauna behaviour.	10	N/A	-	Type A Low Order Impact	Tolerable

7.2.2 Source of Hazard

Project vessels will routinely use external lighting to navigate and conduct safe operations at night throughout the petroleum activity. External lighting on the project vessels will generate light glow and direct illumination of surrounding surface waters. Most external lighting is directed towards working areas such as the main decks, although spot lighting may also be used as needed, such as ROV deployment and subsea infrastructure retrieval. Lighting on project vessels is required for safety and navigational purposes and cannot be eliminated.

External lighting for deck operations typically consists of bright white (metal halide, halogen, fluorescent) lights and Light Emitting Diode (LED). Lighting is designed to ensure adequate illumination for safe working conditions. Typical light intensity values are 5-10 lux for walkways, 50 lux for working areas and around 100 lux for high-intensity light areas. Light intensity diminishes with inverse of distance squared ($I_{received} = I/r^2$). The distance at which direct light and sky glow may be visible from the source depends on the vessel lighting and environmental conditions. As a guide, **Figure 7-1** presents a simple calculation of diminishment of received light with distance, assuming 100 lamps on a vessel of low, medium, and high intensity, each acting additively. Light received is diminished to about the equivalent of light that would be received from a full moon within about 200 m from the vessel, and to that of a moonless clear night within about 1,500 m for low-intensity lights and 3,000 m for high-intensity lights. While a useful guide, these calculations are conducted in lux, a photometric unit which is weighted to the wavelength sensitivity of the human eye and may underestimate light intensity across the whole light spectrum which is visible to other species.

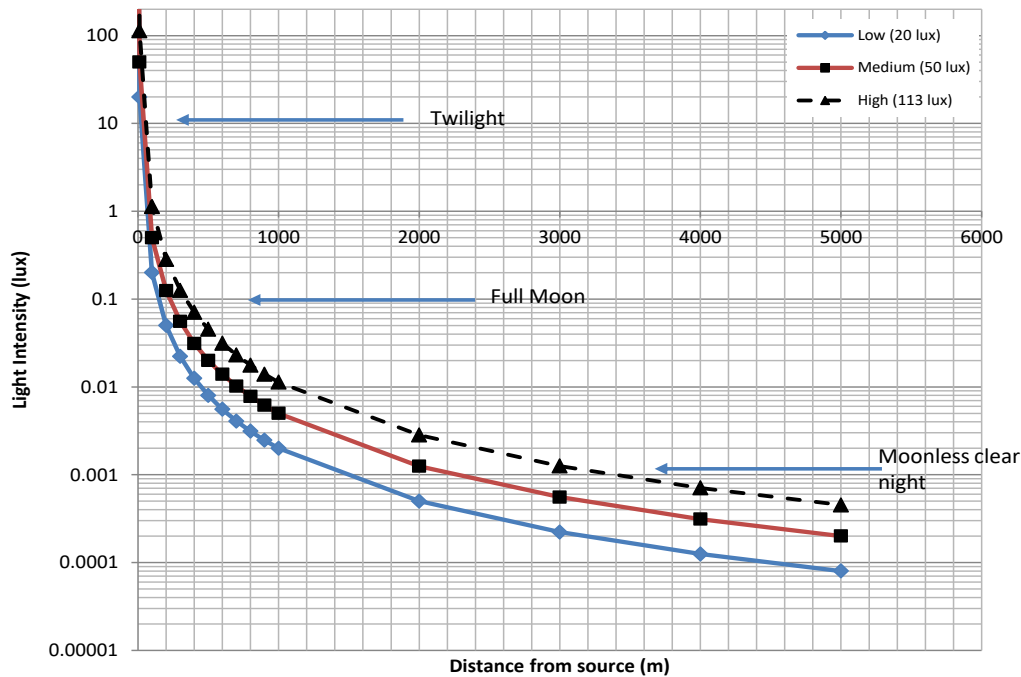


Figure 7-1: Reduction of light received with increasing distance from source, assuming 100 lamps of low, medium, and high intensity

7.2.3 Environmental Impact Assessment

Receptors that have important habitat within a 20 km buffer of the operational area are considered for the impact assessment within this section, based on recommendations of the *National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds* (NLPG) (Commonwealth of Australia, 2020). The 20 km threshold provides a precautionary limit based on observed effects of sky glow on marine turtle hatchlings demonstrated to occur at 15 to 18 km and fledgling seabirds grounded in response to artificial light 15 km away (Commonwealth of Australia, 2020).

The Multiple Use Zone of the Gascoyne Australian Marine Park lies within 20 km of the Operational Area, while the protected areas associated with the Ningaloo Coast, including the Ningaloo World Heritage Area, do not (**Section 4.5.5**).

The fauna within and immediately adjacent to the operational area are predominantly pelagic fish and zooplankton, with a low abundance of transient species such as marine turtles, whale sharks, cetaceans and migratory shorebirds and seabirds. Artificial lighting has the potential to affect marine fauna that use visual cues for orientation, navigation, or other purposes, resulting in behavioural responses that can alter foraging and breeding activity. The species with greatest sensitivity to light are marine turtles, seabirds, and fish.

Potential impacts to marine fauna from artificial lighting may include:

- disorientation, attraction, or repulsion to the light
- disruption to natural behaviour patterns and cycles
- indirect impacts such as increased predation risks through attraction of predators.

These potential impacts depend on:

- the wavelength and intensity of the lighting, and the extent to which the light spills into important wildlife habitat (such as foraging, breeding, and nesting)
- the timing of light spill relative to the timing of habitat use by marine fauna sensitive to lighting effects
- the physiological sensitivity and resilience of the fauna populations that are at risk of potential effects.

The fauna within the area that may be impacted by artificial light emissions are predominantly pelagic fish and zooplankton, with a low abundance of transient species such as marine turtles, whale sharks, cetaceans and

migratory shorebirds and seabirds. There is no known critical habitat within the area that may be impacted by artificial light emissions for EPBC listed species. This area does not overlap any habitat critical for the survival of species of marine turtles. Artificial light emissions overlap (**Section 4.6.2**):

- pygmy blue whale migration and distribution BIA
- wedge-tailed shearwater breeding BIA

As described in **Section 4.6.1**, interesting buffer habitat critical for the survival of the species for flatback, green, hawksbill and loggerhead turtles are located approximately 19 km, 22 km, 48 km and 22 km, respectively, from the Operational Area (**Table 4-8**). However, as outlined below, it is considered interesting adult female turtles are not impacted by artificial light emissions, and it is more relevant to consider separation distances between light sources and nesting habitat critical for the survival of marine turtles (i.e., the nesting locations as identified in Table 6 of the *Recovery Plan for Marine Turtles in Australia 2017-2027* (Commonwealth of Australia, 2017)).

7.2.3.1 Fish and Zooplankton

Fish and zooplankton may be directly or indirectly attracted to light. Experiments using light traps have found that some fish and zooplankton species are attracted to light sources (Meekan et al., 2001), with traps drawing catches from up to 90 m (Milicich, 1992). Lindquist et al. (2005) concluded from a study that light fields around oil and gas activities resulted in an enhanced abundance of clupeids (herring and sardines) and engraulids (anchovies), both of which are known to be highly photopositive.

The concentration of organisms attracted to light results in an increase in food source for predatory species and marine predators are known to aggregate at the edges of artificial light halos. Shaw et al. (2002), in a similar light study, noted that juvenile tunas (Scombridae) and jacks (Carangidae), which are highly predatory, may have been preying upon concentrations of zooplankton attracted to the light fields around oil and gas activities. This could potentially lead to increased predation rates compared to unlit areas.

Light spill from the project vessels onto the surrounding surface waters, particularly during night-time activities, is likely to result in aggregations of fish around the project vessels as they are attracted to the light and increased food availability. However, the operational area does not contain any significant feeding, breeding or aggregation areas for important fish species. The potential for increased predation activity and impact to fish and zooplankton is anticipated to be temporary and minor.

Demersal fish assemblages are identified as an environmental value of the Gascoyne Marine Park (DNP, 2018). Given the water depth in the Operational Area is approximately 800 m, artificial light emissions during the petroleum activity will not credibly be observable by demersal fish due to attenuation in the water column. Hence Woodside considers there is no credible impact to this environmental value within the Gascoyne Marine Park.

7.2.3.2 Seabirds and Migratory Shorebirds

Studies conducted between 1992 and 2002 in the North Sea confirmed artificial light was the reason seabirds were attracted to and accumulated around illuminated offshore infrastructure (Marquenie et al., 2008) and lighting can attract seabirds from large catchment areas (Wiese et al., 2001). Availability of roosting refuge at sea and increased food availability may be the most important reasons why seabirds are attracted to offshore oil and gas infrastructure (Wiese et al., 2001). Seabirds may either be attracted by the light source itself or indirectly, as structures in deep water environments tend to attract marine life at all trophic levels, creating food sources and shelter for seabirds (Wiese et al., 2001). The light from vessels may also provide enhanced capability for seabirds to forage at night (Burke et al., 2005). Studies in the North Sea indicate migratory birds are attracted to lights on offshore platforms when travelling within a radius of 3 to 5 km from the light source (Marquenie et al., 2008). Beyond this distance, it is assumed light source strengths were not sufficient to attract birds away from their preferred migration route.

Negative potential impacts to seabirds and migratory shorebirds attracted by artificial lighting can include disorientation causing collision, entrapment, stranding, grounding and interference with navigation (being drawn off course from usual migration routes) (Commonwealth of Australia, 2020). These behavioural responses may cause injury or death. Seabird mortalities from collisions have been found to be correlated to conditions of poor visibility (cloud, fog, or rain) and proximity to nearby seabird colonies (Black, 2005). The operational area overlaps with the wedge tailed shearwater BIA (breeding and foraging). The nearest colony of wedged tailed shearwaters is the Murion Islands, 46 km to the south-east, far enough that fledglings would not be at risk from light emissions. Tagging studies of wedge-tailed shearwaters nesting on the Muiron Islands found that foraging birds tended to be

associated with sea mounts and foraged widely (Cannell et al., 2019), with no particular association with the operational area.

Seabirds are identified as an environmental value of the Gascoyne Marine Park (Director of National Parks, 2018). Light emissions from the petroleum activity could credibly result in short-term behavioural impacts to seabirds foraging or moving through the Multiple Use Zone (IUCN Category VI) of the park. Such impacts are not considered inconsistent with the management principles for IUCN Category VI zones stated in the *North-west Marine Parks Network Management Plan 2018* (DNP, 2018).

During the petroleum activities, it is possible a small number of seabirds and migratory shorebirds may be attracted to the project vessels within the operational area. However, as this is not expected to result in impacts to birds beyond a temporary change in behaviour, any impact is anticipated to be temporary and minor. Any collision between the birds and project vessels because of the attraction are highly unlikely due to the lack of aggregation areas for birds over the operational area and slow-moving project vessels.

7.2.3.3 Marine Turtles

The attraction of marine turtles to light has been well documented. Adult marine turtles may avoid nesting on beaches that are brightly light (Price et al., 2018; Witherington, 1992) and adult and hatchling turtles can be disorientated and unable to find the ocean in the presence of direct light or sky glow (Lorne and Salmon, 2007; Price et al., 2018; Thums et al., 2016; Witherington, 1992).

Five marine turtle species were identified as potentially occurring in the operational area (**Table 4-6**). However, there are no BIAs or habitats critical for the survival of turtles that overlap the operational area.

7.2.3.3.1 Hatchlings

The nearest marine turtle nesting site is North West Cape (approximately 39 km from the operational area), which exceeds the 20 km buffer set by the NLPG; therefore, sky glow and light spill from project vessels will not reach any nesting beach. The potential effect of turtle hatchlings being attracted to the project vessels is mitigated by the distance from nesting sites, which means light generated within the operational area would not be visible from ground level.

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

7.2.3.3.2 Adults

Although individuals performing behaviours such as inter-nesting, migration, mating (adults) or foraging (adults and pelagic juveniles) may occur within the operational area, marine turtles do not use light cues to guide these behaviours. There is currently no evidence to suggest inter-nesting, mating, foraging, or migrating turtles are impacted by light from offshore vessels. Light emissions from the vessels are unlikely to result in displacement of, or behavioural changes to, individuals in these life stages.

Spending most of their lives in the ocean, adult female marine turtles nest above the high-tide mark on sandy tropical and subtropical beaches, predominantly at night (Witherington and Martin, 2000). They rely on visual cues to select nesting beaches and orient on land. Artificial lighting on or near beaches has been shown to disrupt nesting behaviour. Lighting may affect the location where turtles emerge onto the beach, the success of nest construction, whether the nesting attempts are abandoned, and even the directness of paths as adult females return to the sea (Witherington and Martin, 2000). The nearest marine turtle nesting site is 39 km from the operational area. Nesting sites at this distance will not be visible as sky glow to nesting adult turtles, therefore the light emissions from the project vessels will not displace females from nesting habitats.

Five marine turtle species were identified as potentially occurring in the operational area (**Table 4-6**), although no habitat critical for the survival of marine turtles or biologically important areas overlap the operational area. Individual turtles may traverse the operational area during the petroleum activities; however, considering the water depths of the operational area (around 800 m) and distance to nesting beaches (approximately 39 km to North West Cape), large numbers of inter-nesting adults are not expected. Behavioural impacts to marine turtles from light emissions from the project vessels are anticipated to be temporary and minor.

Internesting habitat for marine turtles is identified as an environmental value of the Gascoyne Marine Park (Director of National Parks, 2018), and the area that may be impacted by artificial light emissions partially overlaps the

Multiple Use Zone (IUCN Category VI) of the park. Nesting habitat¹⁸ critical for the survival of flatback, green and loggerhead turtles lie approximately 18 km, 21 km, and 21 km from the operational respectively and may lie within the area that may be impacted by artificial light emissions. Internesting behaviour is typically restricted to water depths < 30 m. The water depths in the area that may be impacted by artificial light emissions are > 200 m depth and therefore are anticipated to be too deep to support internesting behaviour. Hence, artificial light emissions are not anticipated to impact upon internesting turtles and therefore such emissions are not considered inconsistent with the objectives of the Gascoyne Marine Park (DNP, 2018) and the *Recovery Plan for Marine Turtles in Australia* (Department of the Environment and Energy, 2017).

7.2.3.4 Cumulative Impacts

There is potential for SIMOPs to occur with activities covered under this EP and other Woodside decommissioning activities within WA-32-L as described in **Section 3.5**. Typically, only one general support vessel will be performing field management in the operational area at any time typically for a period of up to 15 days. Two (but up to four) project vessels may be in the operational area during subsea infrastructure removal activities (noting typically a maximum of two will be on DP at any one time). The subsea infrastructure removal activities are expected to be conducted over a period of around six months (refer **Section 3.4**). Additionally subsea infrastructure removal activities may occur concurrently with P&A activities (**Section 3.5, Figure 3-2**). Whilst any overlap with P&A activities are expected to be short in nature, multiple light sources may result in cumulative impacts.

Increased numbers of vessels in WA-32-L during SIMOPS may result in a slight increase in skyglow generated in WA-32-L. Given the distance from other production facilities off North West Cape (approximately 16 km or more, **Section 4.7.5**) and the distance from shore (approximately 37 km, **Section 3.2**), skyglow from SIMOPS will not materially increase the skyglow observable from shore. Hence, impacts to shore-based receptors such as nesting or roosting seabirds or nesting and hatchling turtles will not credibly occur.

The Operational Area overlaps a foraging and breeding BIA for the wedge-tailed shearwater and is located approximately 52 km from the Muiron Islands, which is a significant breeding site for this species. However, the cumulative impacts from additional vessels during SIMOPS is unlikely to materially change the impacts to wedge-tailed shearwaters (e.g., behavioural disturbance such as attraction) given the relatively short duration of SIMOPS and the nature of behavioural impacts of lighting (i.e., increasing the number of vessels in WA-32-L is unlikely to increase attraction behaviour substantially more than the MODU alone). While within the broader foraging area for wedge-tailed shearwaters, the Operational Area does is unlikely to represent important foraging habitat for wedge-tailed shearwaters, which forage widely and often around sea mounts or other relatively productive oceanographic features (Cannell et al., 2019). Hence, cumulative impacts from light emissions from the MODU and vessels (including SIMOPS) on marine fauna are considered minor and temporary.

7.2.3.5 Species Recovery Plans, Approved Conservation Advice and Threat Abatement Plans

Woodside has considered information contained in recovery plans, approved conservation advice and threat abatement plans (**Section 9**). This includes the *Recovery plan for marine turtles in Australia 2017-2027* (Commonwealth of Australia, 2017) as well as the recently published NLPG (Commonwealth of Australia, 2020).

The overarching objective of the *Recovery plan for marine turtles in Australia 2017-2027* (Commonwealth of Australia, 2017) is to reduce detrimental impacts on Australian populations of marine turtles and hence promote their recovery in the wild. All six species of marine turtle that occur in Australian waters are listed as threatened under the EPBC Act. Marine turtles are long-lived, slow to mature and are subject to multiple threats. Light pollution is identified as a high-risk threat in the *Recovery plan for marine turtles in Australia 2017-2027* (Commonwealth of Australia, 2017). Minimising light emissions, such that artificial light within or adjacent to habitat critical to the survival of marine turtles, is managed so marine turtles are not displaced from these habitats (Commonwealth of Australia, 2017). As there are no safe alternatives to using artificial lighting on the project vessels, and as lighting will be restricted to that required to provide safe working and navigational requirements, it is considered minimised to ALARP. In summary, Woodside considers the proposed activity is not inconsistent with the *Recovery plan for marine turtles in Australia 2017-2027* (Commonwealth of Australia, 2017).

7.2.3.6 Cultural Values and Heritage

Through consultation and review of available literature (**Section 4.7.1**), Woodside understands that marine fauna that may be affected by light emissions, such as turtles and plankton, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered

¹⁸ Note this habitat is defined by buffers extending ranging from 20 km to 40 km from nesting beaches, rather than nesting beaches themselves.

a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact turtle populations and their marine environment may have an indirect impact on some Indigenous communities if they deplete hunting areas and threaten local food security (Delisle et al. 2018). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes results in reduced sightings (e.g., through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group’s intangible cultural heritage (UNESCO 2003).

As described in the environmental impact assessment (**Section 7.2.3**), potential impacts to marine fauna are predicted to be at an individual level, which are not considered to be ecologically significant at a population level. Impacts are not expected to occur to significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

7.2.4 Demonstration of As Low As Reasonably Practicable

The ALARP process performed for the environmental aspect is summarised in **Table 7-4**. This process was completed as outlined in **Section 6.2** 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 7-4: Light emissions - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Eliminate use of vessels.	Reject	Vessels are required to conduct the petroleum activity. Control not feasible.	Not applicable
Restrict the petroleum activities to daylight hours, eliminating the need for external work lights.	Reject	Components of the petroleum activity cannot safely be completed within a 12-hour day shift. As such, the need for external lighting cannot safely be eliminated. Control is not considered feasible.	Not applicable
Eliminate potential for cumulative impacts by separating equipment removal and plug and abandonment activities in time or restricting the number of vessels in the operational area.	Reject	SIMOPS may be required to comply with General Direction 833. Potential cumulative impacts of light emissions are minor. The cost of the control is grossly disproportionate to the environmental benefit.	Not applicable.
Substitute			
Substitute external lighting with light sources designed to minimise impacts and marine turtles (as per NLPG 2020 management actions) by: <ul style="list-style-type: none"> using flashing / intermittent lights instead of fixed beam 	Reject	The retrofitting of all external lighting on the project vessels is significant in cost. Given the distance of the operational area from the nearest nesting sites and the already minor impacts of lighting from the petroleum activity on marine fauna, the control cost outweighs the environmental	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<ul style="list-style-type: none"> ▪ using motion sensors to turn lights on only when needed ▪ using luminaires with spectral content appropriate for the species present ▪ avoiding high intensity light of any colour. 		benefit.	
Manage timing of the petroleum activity to avoid sensitive life cycles for light sensitive marine fauna.	Reject	Limitation on timing of the activity imposes substantial schedule constraints. The operational area overlaps with the flatback and hawksbill turtle interesting BIA. However, is not in and not known to provide significant foraging habitat. Given already minor impacts of lighting from the petroleum activity on marine turtles, the control cost outweighs the environmental benefit.	Not applicable
Administrative			
Lighting will be limited to the minimum required for navigational and safety requirements, with the exception of emergency events	Accept	Limiting light during the Petroleum Activities Program will minimise potential for light attraction and vessel interaction with seabirds. While the control does not result in reduction of impacts, it is good practice and not at significant cost.	PS 2.1
Implement the Offshore Seabird Management Plan, including: <ul style="list-style-type: none"> ▪ Standardisation and maintenance of record keeping and reporting of seabird interactions. ▪ Procedures on seabird intervention, care and management ▪ Regulatory reporting requirements for seabirds (unintentional death of or injury to seabirds that constitute MNES) ▪ A scalable adaptive management process should negative light impacts to nocturnal seabirds be detected. 	Accept	Reduction in net light emissions from the vessels reducing the likelihood of attracting nocturnal seabirds. Adaptive management framework outlined in the Offshore Seabird Management Plan will prevent population level impacts from occurring, and the care and release protocol will reduce impacts at the individual level. Control is feasible but a minimum level of lighting is required on project vessels for safety. Benefit outweighs cost, given the low costs in implementation and potential benefits in providing certainty that population level impacts to nocturnal seabirds will not occur.	PS 2.2

7.2.4.1 ALARP Summary

The risk assessment and evaluation has identified controls (**Table 7-4**) that when implemented are considered to manage the impacts of light emissions on marine fauna to ALARP.

Woodside considers the control measures described above are appropriate to reduce impacts of light emissions on marine fauna. Additional reasonable control measures were identified in **Table 7-4** 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.

7.2.5 Demonstration of Acceptability

Illumination of working areas on the project vessels is necessary for safe working practices, as determined as part of a Vessel Safety Case assessment under the OPGGS Act requirements. Navigational lighting is also required to satisfy AMSA's Prevention of Collision Convention (Marine Order 30, Issue 7) requirements.

Given the adopted controls, the light emissions generated during the petroleum activity will not result in potential impacts greater than temporary and minor behavioural disturbance to marine fauna. Further opportunities to reduce the impacts have been investigated in **Table 7-4**.

The adopted controls are considered industry good practice and in accordance with the NLPG (Commonwealth of Australia, 2020) management actions. No concerns or objections regarding the impacts of light emissions have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (**Section 9**). The environmental impacts meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The light emissions aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect. There is variability in the presence and timing of some environmental receptors that may be impacted by light emissions; however, the nature and scale of the potential impacts pose no risk of serious or irreversible environmental impacts.
- Inter-generational principle: The light emissions aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The light emissions aspect will not impact upon biodiversity or ecological integrity.

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

The area that may be affected by artificial light emissions overlap the Gascoyne Marine Park and habitat critical for the survival of marine turtle stocks. The potential impacts from artificial light emissions on the environmental values in the Gascoyne Marine Park and habitat critical for the survival of marine turtles are consistent with the conservation objectives of the Gascoyne Marine Park (DNP, 2018a) and the *Recovery Plan for Marine Turtles in Australia* (Department of the Environment and Energy, 2017).

Woodside considers the impact to be managed to an acceptable level..

7.2.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 7-5: Environmental performance outcomes, performance standards and measurement criteria for light emissions

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 2 Light emissions managed to limit impacts to marine fauna to short-term behavioural impacts only.</p>	<p>C 2.1 Lighting will be limited to that required for navigational and safety requirements, with the exception of emergency events</p>	<p>PS 2.1 Lighting limited to that required for safe work/navigation.</p>	<p>MC 2.1.1 Inspection verifies no excessive light being used beyond that required for safe work/navigation</p>
	<p>C 2.2 Implement the Offshore Seabird Management Plan, including:</p> <ul style="list-style-type: none"> ▪ Standardisation and maintenance of record keeping and reporting of seabird interactions. ▪ Procedures on seabird intervention, care and management ▪ Regulatory reporting requirements for seabirds (unintentional death of or injury to seabirds that constitute MNES) ▪ A scalable adaptive management process should negative light impacts to nocturnal seabirds be detected. 	<p>PS 2.2 Implementation of the Seabird Management Plan to minimise potential for light attraction.</p>	<p>MC 2.2.1 Records demonstrate Seabird Management Plan implemented.</p>

7.3 Noise Emissions

7.3.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Underwater noise emissions	Generation of underwater noise from the project vessels during normal operations.	Underwater sound emitted to marine environment causing behavioural disturbance to marine fauna.	30	N/A	-	Type A Low Order Impact	Tolerable
	Generation of noise from subsea infrastructure and wellheads cutting equipment.		10	N/A	-	Type A Low Order Impact	Tolerable
	Generation of noise from acoustic survey equipment, including MBES and SSS from ROV used for surveying subsea infrastructure.		10	N/A	-	Type A Low Order Impact	Tolerable

7.3.2 Source of Hazard

7.3.2.1 Noise Generated by Project Vessels

Project vessels will generate noise when operating thruster engines, propeller cavitation, on-board machinery and such. This noise has the potential to exceed ambient noise levels which typically range from around 90 dB re 1 µPa (root square mean sound pressure level (rms SPL)) under very calm, low wind conditions, to 120 dB re 1 µPa (rms SPL) under windy conditions (McCauley, 1998).

The sound level and frequency characteristics generated by vessels depend on their size, weight and number and type of propellers. A typical general support vessel's peak frequency or band ranges from 1 to 500 Hz at a peak source level of 170 to 190 dB re 1 µPa at 1 m. Larger vessels' peak source levels have been presented in Arveson and Vendittis (2000). Larger vessels (such as a heavy lift vessel) may generate marginally higher peak source level (such as a 1 to 2 dB re 1 µPa at 1 m peak source level) compared to a smaller general support vessel, such as that used for non-routine field management activities. Therefore, it is considered the sounds levels from project vessels used for the petroleum activity will be in the range of 170 to 192 dB re 1 µPa at 1 m at 1 to 500 Hz.

Typically, only one general support vessel will be performing field management in the operational area at any time typically for a period of up to 15 days. Typically two (but up to six) project vessels will be in the operational area during subsea infrastructure removal activities. The subsea infrastructure removal activities are expected to be conducted over a period of around six months (refer **Section 3.3**). Noise from multiple project vessels from the removal activities could therefore be generating noise emissions for a period of up to six months.

Indicative source characteristics for project vessels are summarised in **Table 7-6**.

7.3.2.2 Noise Generated by Helicopters

Crew changes via helicopters are required when recovering subsea equipment activities. The main noise source associated with helicopters are the engines and rotor blades. Noise levels for typical helicopters used in offshore

operations (Eurocopter Super Puma AS332) at 150 m separation distance have been measured at up to a maximum of 90.6 dB (BMT Asia Pacific, 2005). Noise level reported for a Sikorsky-61 is 108 dB re 1 μ Pa at 305 m (Parsons et al., 2004), which further diminishes with increasing helicopter altitude. Sound emitted from helicopter operations is typically below 500 Hz (Richardson et al., 1995).

7.3.2.3 Noise Generated by Acoustic Survey Equipment

During petroleum activity, SSS and MBES may be deployed on the ROV and used during subsea infrastructure and seabed surveys. SSS devices operate at frequencies similar to those used in 'fish finders' by commercial fishers. The noise generated is highly directional and at high frequencies (75 to 900 kHz) (Jiménez-Arranz et al., 2017). MBES is another device which operates in similar fashion, typically emitting sounds at high frequencies (400 kHz). High-frequency acoustic signals attenuate quickly in the water column and typically do not propagate over long distances.

An underwater modelling study of geophysical equipment was performed by JASCO Applied Sciences (Zykov, 2013), off the coast of California. The study included SSS and MBES, and modelled them in a similar, underwater environmental setting to the North West Shelf (sandy bottom, between 10 to 4,500 m water depth). The modelling assessed the worst-case SPL and frequency for the system being tested and presented the distances at which the SPLs were reached for root mean squared (rms) (used as the average) threshold values. The maximum distance (R_{max}) that the modelling showed the MBES and SSS SPLs were reduced to just above background level (120 dB re 1 μ Pa) was around 1 km and 1.5 km from the source respectively (Zykov, 2013). Although caution should be taken in applying results of noise modelling conducted for a different location, the results demonstrate a relatively localised effect of MBES and SSS operation on ambient noise levels.

Indicative source characteristics for typical acoustic survey equipment are summarised in **Table 7-6**.

7.3.2.4 Noise Generated by Cutting

Flowlines and mooring chains will be cut using a subsea hydraulic shear cutter, hydraulic super grinder, or multi-cutter. Noise levels will be low and be emitted for a short period (minutes to hours) during each cut. Grinding underwater may give rise to noise levels of 90 to 105 dB re 1 μ Pa (Mora et al., 2011), significantly less intense than emitted from project vessels (described above).

Twachtman et al. (2004) studied the operations and socio-economic impact of non-explosive removal of offshore structures, including noise, and concluded that mechanical cutting and abrasive water jet, as well as diamond wire cutting methods, are generally considered harmless to marine life and the environment. Similarly, Pangerc et al. (2016) described the underwater sound measurement data during an underwater diamond wire cutting of a 32-inch conductor (10 m above seabed in around 80 m depth) and found the sound radiated from the diamond wire cutting of the conductor was not easily discernible above the background noise at the closest recorder located 100 m from the source. The sound that could be associated with the diamond wire cutting was primarily detectable above the background noise at the higher acoustic frequencies (above around 5 kHz) (Pangerc et al., 2016) above the hearing range of low frequency cetaceans. Background noise was attributed to surface vessel activity such as dynamic positioning.

Any noise propagating at seabed from either mechanical cutting or diamond wire saw cutting of the wellhead casing and conductors is likely to attenuate to levels at, or close to, background ambient levels within 100 m of the source, with ambient levels being significantly elevated by the concurrent presence of a project vessel on DP immediately above the wellhead locations. As such, noise from the cutting of the casing and conductors will not add to cumulative noise levels for the operation to any extent.

Indicative source characteristics from cutting equipment is summarised in **Table 7-6**.

Table 7-6: Summary of noise emissions generated during the petroleum activity

Activity	Estimated SPL	Frequency	Type
Project vessels	170-192 dB re 1 µPa at 1 m	1 to 500 Hz	Continuous
Infrastructure cutting	136-141 dB re 1 µPa at 10 m	Around 5 kHz	Continuous
SSS	200-234 dB re 1 µPa at 1 m	75 to 900 kHz	Impulsive
MBES	210-247 dB re 1 µPa at 1 m	400 kHz	Impulsive

7.3.3 Environmental Impact Assessment

Underwater noise can affect marine fauna through:

- disturbance and stress leading to behavioural changes or displacement of fauna; the occurrence and intensity of disturbance is highly variable and depends on a range of factors relating to the animal and situation
- masking or interference with other biologically important sounds (including vocal communication, echolocation, signals, and sounds produced by predators or prey)
- secondary ecological effects such as an alteration of predator/prey relationship
- injury to hearing or other organs. Hearing loss may be temporary (temporary threshold shift (TTS)) or permanent (permanent threshold shift (PTS)). Southall et al. (2007) defined TTS as a threshold shift of 6 dB above the normal hearing threshold. If the threshold shift does not return to normal, permanent threshold shift (PTS) has occurred. Threshold shifts can be caused by acoustic trauma from a very intense sound of short duration, as well as from exposure to lower-level sounds over longer time periods (Houser, 2017).

The extent of the impacts of underwater noise on marine fauna depends upon the frequency range and intensity of the noise produced and the type of acoustic signal (continuous or impulsive).

Available threshold criteria associated with behavioural and physiological impacts for sensitive receptors have been derived from several sources (National Marine Fisheries Service, 2018; Popper et al., 2014), as detailed in the next sections. These criteria have been compared with measured and predicted sound levels for different sound sources to assess potential impacts.

7.3.3.1 Marine Mammals

Marine mammal species differ in their hearing capabilities, in absolute hearing sensitivity, as well as frequency band of hearing (Southall et al., 2019).

Exposure to intense impulsive noise may be more hazardous to hearing than continuous (non-impulsive) noise. Impulsive sound sources include MBES and SSS, which are outside the auditory range of low frequency cetacean auditory range (baleen whales, including humpback and pygmy blue whales) but within the mid frequency cetacean auditory range (orca, sperm whales and dolphins) (**Table 7-7**).

Table 7-7: Frequency range of MBES and SSS and overlap with low-, mid- and high-frequency cetacean auditory ranges

Source	Frequency Range	Potential for Disturbance		
		Low-frequency Cetaceans ¹	Mid-frequency Cetaceans ¹	High-frequency Cetaceans ¹
Auditory frequency range (kHz)		0.07 to 22	0.15 to 160	0.2 to 180
MBES	400 kHz	✘	✓	✓
SSS	75-900 kHz	✘	✓	✓

¹ Southall et al. (2007)

The PTS and TTS (for impulsive and continuous sources) are from the National Marine Fisheries Service (NMFS) (2018), which is the most current technical guidance for assessing the effect of anthropogenic sound on marine mammal hearing. These thresholds are also adopted by Southall et al. (2019) and Southall et al. (2021) review. The continuous noise and impulsive noise thresholds are summarised in **Table 7-8** and **Table 7-9** respectively and have been adopted for activities' project vessel noise and cuttings noise. While dugongs may occur in the operational area, dugongs spend most of their time in shallow tidal and subtidal seagrass meadows. There are no assessments for impacts of vessel noise on dugongs (sirenians) using the NMFS (2018) criteria. As dugong hearing frequency is most like mid and high frequency cetaceans, results for vessel noise impacts on mid-frequency cetaceans may be used as a proxy for those on dugong.

Table 7-8: Continuous noise impact thresholds for acoustic effects on marine mammals

Hearing Group	Behavioural ¹ SPL (dB re 1 µPa)	TTS Onset ² Weighted SEL _{24h} (dB re 1 µPa ² .s)	PTS Onset ² Weighted SEL _{24h} (dB re 1 µPa ² .s)
Low-frequency cetaceans	120	179	199
Mid-frequency cetaceans	120	178	198

¹ ESA Section 7 Consultation Tools for Marine Mammals on the West Coast (National Oceanic and Atmospheric Administration (NOAA), 2019)

² 2018 Revision to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) - Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts (NOAA et al., 2018)

Table 7-9: Impulsive noise impact thresholds for acoustic effects on marine mammals

Hearing Group	Behavioural ¹	TTS Onset ²		PTS Onset ²	
	SPL (dB re 1 µPa)	Weighted SEL _{24h} (dB re 1 µPa ² .s)	Peak SPL (dB re 1 µPa)	Weighted SEL _{24h} (dB re 1 µPa ² .s)	Peak SPL (dB re 1 µPa)
Mid-frequency cetaceans	160	170	224	185	230

¹ ESA Section 7 Consultation Tools for Marine Mammals on the West Coast (NOAA, 2019)

² 2018 Revision to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) - Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts (NOAA et al., 2018).

Noise at source from the project vessels exceeds TTS and PTS thresholds at the source. However, since marine fauna are transient in the operational area, which lacks aggregating habitat such as resting or calving areas, individuals are expected to pass through the operational area, potentially showing localised avoidance via behavioural responses (see below). PTS is unlikely as individuals will likely show avoidance before getting within range, individuals are therefore not expected to remain within the vicinity of the noise source for the duration (24 hours) required to exceed the PTS threshold. Underwater noise generated by vessels (continuous (non-impulsive) noise) does not have the intensity and characteristics likely to cause physiological damage in marine fauna (Hatch and Southall, 2009). PTS is unlikely as individuals will likely show avoidance before getting within range. For TTS, individuals would need to pass within tens of metres of the project vessels during operations. This would result in a temporary impact to a low proportion of the migrating population.

Project vessel noise levels may exceed the behavioural response levels in cetaceans (refer to **Table 7-8**) out to distances presented in **Table 7-10**. Within this area, cetaceans may exhibit localised avoidance and attraction behaviour. The operational area overlaps a pygmy blue whale distribution BIA and humpback whale migration BIA (refer **Section 4.6.2**), impacts will be managed in adherence with the *Conservation management plan for the blue whale: A recovery plan under the Environment Protection and Biodiversity Conservation Act 1999 2015-2025* (Commonwealth of Australia, 2015b) and *Conservation advice Megaptera novaeangliae humpback whale* (Threatened Species Scientific Committee, 2015f).

Table 7-10: Source levels and frequencies from project vessels and estimated distances at which behavioural disturbance threshold may occur

Source	Indicative Frequency	Source Level	Sound Type	Estimated Distance to Behavioural Response
Support vessel	0.2 to 1 kHz ¹	< 186 dB re 1 µPa at 1 m ¹	Continuous	4 km ¹
Large vessel	10 Hz to 40 kHz ²	< 192 dB re 1 µPa at 1 m ²	Continuous	6 km ³

¹ McCauley (1998)

² Arveson and Vendittis (2000)

³ Estimated based on Woodside (2002) and McCauley (1998)

Impulsive PTS and TTS thresholds for mid- and low frequency cetaceans (refer **Table 7-9**) are only expected to be exceeded close to the source. Observed disturbance responses in marine mammals close to impulsive sound sources may include altered swimming direction, increased swimming speed including startle reactions, breathing and diving patterns, avoidance of the sound source area and other behavioural changes. Due to the lack of aggregating areas for sensitive marine fauna species, individuals are expected to be transitory only, displaying behavioural responses, and moving away from the source, before thresholds are exceeded.

Marine mammals that may occur within the operational area are detailed in **Table 4-6** and include low frequency (such as baleen whales), medium frequency (odontocetes, such as orca and sperm whale) and high frequency (such as dolphins) cetaceans. Of these species, the humpback whale is expected to be the most frequently encountered, particularly during annual migrations, given the overlap of the operational area with the migration BIAs. The nearest area of known importance to humpback whales is the Exmouth Gulf resting area, located over 50 km south-east of the operational area. Impacts to migrating humpback whales are limited to localised behavioural response and temporary impact due to TTS should individuals come into proximity of the project vessels. Impacts are not expected to alter humpback whale migration to the detriment of the individual or population.

Pygmy blue whales may also occur in proximity to the operational area during their annual migrations. Recent tagging studies by Thums et al. (2022) encountered 24 pygmy blue whales off North West Cape during their annual migration in a 10-day field trip, observing feeding behaviour in ten of these. Tags attached to several of these whales indicated predominantly northward movement at typical speeds of 2.5-3 km/h, which is consistent with previously observed migration behaviour (Thums et al., 2022). Thums et al. (2022) also observed relatively high residence times of migrating whales over bathymetric features such as canyons, including the canyons around

North West Cape (which form the basis for the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula, which partially overlaps the operational area). This is consistent with observations of higher densities of pygmy blue whales over the Rottneest Canyon near Perth (McCauley et al., 2000).

There is increasing evidence that the continental slope off North West Shelf is important habitat for migrating pygmy blue whales, and this area is recognised as part of a pygmy blue whale migration BIA. There are several operating FPSOs, with associated support vessels and offtake tankers. Measurements of underwater noise from the Vincent and Enfield oil developments, both within 25 km, observed underwater noise levels consistent with the nature and scale of those that may occur during the petroleum activity (Erbe et al., 2013; McCauley and Jenner, 2001; McCauley, 2002; McPherson and Erbe, 2010). These noises have been continuous for over ten years with little apparent disturbance of pygmy blue or humpback whales, and were present when Thums et al. (2022) undertook their tagging study; Thums et al. (2022) did not note any apparent behavioural disturbances due to underwater noise.

The most intense noise source expected to occur during the petroleum activity is noise from the dynamic position thrusters. This noise is largely due to cavitation and is broad band in nature, which much of the sound energy at higher frequencies absorbed within 1-2 km of the source, and behavioural impacts are expected to be limited to within 6 km of the vessel generating the noise (**Table 7-10**). Given the open ocean environment in the operational area, any displacement of pygmy blue whales from within 6 km of project vessels will not prohibit biologically important behaviours, such as migration and feeding.

Southern right whales can also occur in the region, with the Operational Area included in the far northern extent of the species range. However, identified southern right whale historic high use areas, reproductive BIAs and reproductive area locations which are all located thousands of kilometres away off southern Western Australia, South Australia, Victoria and Tasmania (DCCEEW, 2022).

Any impacts continuous and impulsive noise sources to marine mammals are anticipated to be temporary and minor and relate to behavioural changes only.

7.3.3.2 Marine Turtles

Marine turtles are at low risk of mortality or permanent injury from continuous noise sources, such as project vessels, even near the source (Popper et al., 2014).

Popper et al. (2014) provided injury thresholds for turtles (> 207 dB re 1 μ Pa at 1 m) for impulsive noise; however, no thresholds were provided for behavioural disturbance nor were any specific impact thresholds provided for shipping noise. For continuous noise sources, such as vessel operations, marine turtles have been shown to avoid intense low-frequency sounds, such as seismic airgun discharges (DeRuiter and Doukara, 2012).

Dow Piniak (2012) found green, leatherback and hawksbill turtles have the greatest hearing sensitivity, between 50 to 400 Hz; therefore, the audible frequency range of marine turtles overlaps with the MBES and SSS frequency presented in Table 7.4. Studies indicate turtles may begin to show behavioural responses to approaching impulsive sounds levels of around 166 dB re 1 μ Pa (McCauley et al., 2000). Considering the United States of America National Marine Fisheries Service criteria for behavioural effects in turtles of 166 dB re 1 μ Pa (SPL) and the sound modelling (Zykov, 2013) the MBES and SSS equipment could potentially disturb turtles within a distance of a few hundred metres. Turtle behavioural responses when exposed to underwater noise include diving and avoidance. Such disturbances are not expected to have any significant effect on individual turtles and be limited to behavioural changes for the duration of exposure.

Five marine turtle species were identified as potentially occurring in the operational area (**Table 4-6**), although the operational area does not overlap any BIAs of habitats critical for the survival of marine turtles. Marine turtles are not expected to be in the operational area in high numbers, even during nesting and inter-nesting periods, given the distance from the known nesting beaches.

Both continuous and impulsive noises may result in localised behavioural responses of individuals transiting through the operational area, with minor impact only. Individuals may deviate slightly from their activities but are expected to resume normal behaviour as they move away from the activities. Any impacts are anticipated to be temporary and minor.

7.3.3.3 Fish, Sharks and Rays

All fish species can detect noise sources, although hearing ranges and sensitivities vary substantially between species. Sensitivity to sound pressure seems to be functionally correlated in fishes to the presence and absence of gas-filled chambers in the sound transduction system. These enable fishes to detect sound pressure and extend their hearing abilities to lower sound levels and higher frequencies (Popper et al., 2019). Based on their anatomy, Popper et al. (2014) classified fishes into three animal groups, comprising:

- fishes with swim bladders whose hearing does not involve the swim bladder or other gas volumes
- fishes whose hearing does involve a swim bladder or other gas volume
- fishes without a swim bladder that can sink and settle on the substrate when inactive.

The criteria defined in Popper et al. (2014) for continuous (**Table 7-11**) noise sources on the above groups have been adopted.

Table 7-11: Continuous noise exposure criteria for fishes (after Popper et al., 2014)

Fish Group	Mortality and Potential Mortal Injury	Recoverable Injury	TTS	Masking	Behavioural Response
Fish: No swim bladder	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: Swim bladder not involved in hearing	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: Swim bladder involved in hearing	(N) Low (I) Low (F) Low	170 dB rms for 48 h	158 dB rms for 12 hr	(N) High (I) High (F) High	(N) High (I) Moderate (F) Low
Fish eggs and larvae	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low	(N) Moderate (I) Moderate (F) Low

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

Based on criteria developed by Popper et al. (2014) for noise impacts on fish, project vessel noise has a low risk of resulting in mortality and a moderate risk of TTS impacts when fish are within tens of metres from the source. Behavioural impacts to fish from survey equipment (MBES and SSS) noise may occur in individuals located within hundreds of metres of the source. However, none of the survey equipment has energy below 1 kHz, which is where greatest perception in many fish occurs (Ladich and Fay, 2013). The most likely impacts to fish from noise will be behavioural responses, reducing any TTS impact. Individual demersal fish may be impacted in the vicinity of the operational area and tuna and billfish and other mobile pelagic species may transverse the operational area.

The operational area overlaps a whale shark foraging BIA. Whale sharks could potentially be impacted from continuous project vessel noise. If in the area, whale sharks would be expected to show avoidance to vessel noise, although they can likely tolerate low level noise, having been observed swimming close to oil and gas platforms on the North West Shelf.

The operational area is not known to be an important spawning or aggregation habitat for commercially caught targeted species. Therefore, no impacts to fish stocks are expected.

Any impacts from continuous and impulsive noise sources to fish, sharks and rays are anticipated to be temporary and minor and relate to behavioural changes only.

7.3.3.4 Cumulative Impact Assessment

Cumulative impacts to environmental receptors may occur when more than one hazard impacts upon a receptor. Cumulative impacts to environmental receptors may occur because of:

- more than one noise source from the petroleum activity impacting upon a receptor, or
- noise sources from the petroleum activity and third-party actions impacting upon the same receptor.

Typically, only one general support vessel will be performing field management in the operational area at any time typically for a period of up to 15 days. Two (but up to four) project vessels will be in the operational area during subsea infrastructure removal activities (noting typically a maximum of two will be on DP at any one time). The subsea infrastructure removal activities are expected to be conducted over a period of around six months (refer **Section 3.4**). Noise from multiple project vessels from the removal activities could therefore be generating noise emissions for a period of around six months.

There is potential for SIMOPs to occur with activities covered under this EP and other Woodside decommissioning activities within WA-32-L as described in **Section 3.4.1**. A maximum of up to four vessels and a MODU may be present in the Operational Area at one time should SIMOPs occur.

Third-party activities with the potential to generate noise emissions that may result in cumulative impacts include commercial shipping and petroleum exploration (particularly seismic surveys). There is relatively little commercial shipping in the vicinity of the operational area (**Figure 4-21**). Woodside is not aware of any planned seismic surveys in the vicinity of the operational area during the execution window for the petroleum activity. Any future seismic surveys seeking approval after acceptance of this EP would be required to assess cumulative noise emissions impacts, including consideration of noise generated by equipment removal activities. Based on the preceding, cumulative impacts to fauna from third-party noise emissions are not considered credible.

Impacts from noise emissions to marine fauna have been considered in the above sections. Potentially sensitive periods relate to the humpback and pygmy blue whale migrations, with relatively high densities of whales in the vicinity of the operational area. The annual aggregation of whale sharks off the Ningaloo Coast may also be a period in which whale sharks are vulnerable to cumulative underwater noise impacts from the petroleum activity.

Cumulative impact from the use of multiple project vessels is not considered to present significant impacts to marine fauna given their mobility and ability to avoid the sound source. Whilst the project vessels may generate noise emissions for a cumulative period of around six months, the noise levels exceeding the distances for behavioural response levels for cetaceans (presented in **Table 7-8**) remain valid given they are based on the worst-case frequency and source levels from a single project vessel (other vessels noise within the operational area will remain below these levels). The size of the pygmy blue whale migration BIA is presented in **Figure 4-13** and the area relating to cetacean behavioural threshold exceedance is a fraction of this overall BIA, it is determined that the cumulative project vessel noise will not substantially impact upon the migration or whales or be detrimental the individual whales or the overall populations.

Impacts from cumulative noise emissions will continue to relate to behavioural disturbance / avoidance only. The operational area is not within an area of high shipping density (**Section 4.7.6**), therefore should avoidance behaviour occur it is anticipated that marine fauna would be able to move to an area below the behavioural threshold. Any impacts from cumulative noise emissions on marine fauna are anticipated to be temporary and minor.

7.3.3.5 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans and approved conservation advice for cetaceans and marine turtles that identify noise interference as a threat (**Section 9**). This includes the objectives and actions within the *Conservation management plan for the blue whale: A recovery plan under the Environment Protection and Biodiversity Conservation Act 1999 2015-2025* (Commonwealth of Australia, 2015b), which relate to noise emissions. The *Recovery Plan for Marine Turtles in Australia 2017-2027* also identifies noise as a potential threat to marine turtles, although this relates to seismic surveys and pile driving. Seismic surveys and pile driving both present a substantially different risk (low frequency, high intensity pulsed noise) than the underwater noise generated during the petroleum activity.

7.3.3.6 Cultural Values and Heritage

Through consultation and review of available literature (**Section 4.7.1**), Woodside understands that marine fauna that may be affected by noise emissions, such as marine mammals and turtles, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact turtle populations and their marine environment may have an indirect impact on some Indigenous communities if they deplete hunting areas and threaten local food security (Delisle et al. 2018). Whale species are subject of First Nations' increase ceremonies / rituals which are performed to enhance or maintain populations. As these thalu ceremonies are performed to maintain and increase populations of marine species, it is considered that management applies at the species/population level and not to individuals. For example the thalu site on Murujuga which "brings in whales to beach" will continue to serve its purpose so long as whales continue to migrate through Mermaid Sound.

Related intangible cultural heritage may include the transmission of cultural knowledge about whales and whale behaviour, including birthing areas, whale communication and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn 2021). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes results in reduced sightings (e.g., through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO 2003).

As described in the environmental impact assessment (**Section 7.3.3**), potential impacts to marine fauna are predicted to be at an individual level, which are not considered to be ecologically significant at a population level. Impacts are not expected to occur to ecologically significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

7.3.4 Demonstration of As Low As Reasonably Practicable

The ALARP process performed for the environmental aspect is summarised in **Table 7-12**. This process was completed as outlined in **Section 6.2** 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 7-12: Noise emissions - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Eliminate the use of vessels	Reject	The use of vessels is required to conduct the petroleum activity. Control not feasible.	Not applicable
Eliminate potential for cumulative impacts by separating equipment removal and plug and abandonment activities in time or restricting the number of vessels in the operational area.	Reject	SIMOPS may be required to comply with General Direction 833. Potential cumulative impacts of noise emissions are minor. The cost of the control is grossly disproportionate to the environmental benefit.	Not applicable.
Substitute			
Vessel to use anchors to	Reject	Would complicate and increase risk of	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
maintain position rather than DP.		works in proximity to subsea infrastructure. Anchoring will cause seabed disturbance. Given the low risk of impacts associated with underwater noise, the increased risks and impacts outweigh the marginal environmental benefit.	
Use of small vessels with lower DP noise levels	Reject	May reduce the amount of noise emissions from vessels as small vessels require a lower power DP. However, any noise impacts are anticipated to be temporary and minor and relate to behavioural changes only activities required are minimal. The vessel sizes are required to undertake the activities and sizes cannot be reduced as they have been chosen based on the engineering assessment. Reducing the size of vessels in the field may lead to unsafe or increased engineering risks during the removal activities and is therefore not feasible.	Not applicable
Engineer			
Reduction in number of vessels required for the petroleum activities	Reject	May reduce the amount of noise emissions from vessels. However, any noise impacts are anticipated to be temporary and minor and relate to behavioural changes only activities required are minimal. The number of vessels required to undertake the activities cannot be reduced and numbers have been chosen based on the engineering assessment. Reducing the number of vessels in the field may lead to unsafe or increased engineering risks during the removal activities and is therefore not feasible.	Not applicable
Administrate			
Manage the timing of petroleum activity to avoid sensitive periods (such as pygmy blue whale migration, humpback whale migration, whale shark foraging).	Reject	Tagging and modelling studies of pygmy blue whales indicate this species migrates through continental slope waters near the Operational Area but does not show high residence times that may indicate dedicated foraging, breeding, or resting behaviours (Möller <i>et al.</i> , 2020, Thums <i>et al.</i> , 2022). Noise emissions from vessels using DP will not credibly result in PTS or TTS in blue or humpback whales, but may result in behavioural disturbance, such	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>as avoidance. Studies on migrating humpback whales exposed to vessel noise indicated short-term changes in behaviour, such as decreasing dive time and movement speed, which recovered once whales moved away from the noise source (Dunlop et al., 2015). The behavioural response did not prevent the migration behaviour, with Dunlop et al. (2015) concluding the presence of the vessel had little effect on the behaviour of migrating humpback whales. Migrating blue whales are expected to exhibit similar behavioural responses. Tagging studies (e.g., Double <i>et al.</i> 2014, Gales <i>et al.</i> 2009, Thums <i>et al.</i>, 2022,) of pygmy blue whales moving through the vicinity of the Operational Area show no apparent prevention of migration behaviour despite several persistent noise sources (e.g., FPSO operations, vessel activities etc.).</p> <p>Whale sharks tagged during their seasonal feeding aggregation off the Ningaloo Coast (March to June, Wilson et al., 2006) moved widely, with no consistent usage of outer continental shelf waters or clear foraging behaviour (Wilson et al., 2006). This evidence suggests that limited numbers of whale sharks will occur in the Operational Area, and the behaviour of these sharks is consistent with migration rather than foraging. Whale sharks are not particularly sensitive to underwater noise, and potential impacts from noise are limited to behavioural impacts in individual whale sharks that would not prevent biologically important behaviour.</p> <p>Avoiding periods of relatively high abundance of pygmy blue whales (June-July and November-December, Thums <i>et al.</i>, 2022), whale sharks (March to June, Wilson et al., 2006) and humpback whales (July to October, Jenner et al., 2001) would limit removal activities to between November and February. General Direction 833 requires that Woodside remove the equipment from the Stybarrow field by 31 March 2025. Limiting the timing of the vessel activities to avoid periods of increased presence of sensitive fauna increases the risk of not completing the removal activities within the time required by General Direction 833.</p>	

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		Limiting the timing of the vessel activities would result in a relatively small environmental benefit, yet the cost of not complying with General Direction 833 is significant. It would also increase the likelihood of removal activities during cyclone season, increasing the likelihood of weather delays. Hence, the cost of implementing this control is grossly disproportionate to the environmental benefit.	
<p>Reduce the likelihood of marine fauna being impacted by vessel noise and movements by¹⁹:</p> <ul style="list-style-type: none"> ▪ Observing the environment for large marine fauna when vessels are moving in the operational area. ▪ Maintaining separation from detected marine fauna. ▪ Reducing speed when in proximity to detected marine fauna. 	Accept	<p>Implementation of controls for reduced vessel speed around marine fauna may reduce the underwater noise emissions from a vessel and lower the likelihood of noise exposure above impact thresholds.</p> <p>Controls based on legislative requirements (EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans) and therefore must be adopted.</p>	PS 3.1
<p>Project vessel engines and other machinery are maintained as per Preventative Maintenance System (PMS) to ensure equipment is operating efficiently.</p>	Accept	<p>Maintenance and inspection completed as scheduled on PMS reduces the generated noise emissions and associated impacts.</p> <p>Machinery maintenance is part of normal operations to ensure operating in accordance with manufacturer’s guidelines.</p> <p>The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 3.2
<p>Pre-watch for marine fauna from the vessel bridge prior to DP operations and not undertaking DP operations until no marine fauna (such as pygmy blue whale and humpback) are present.</p>	Reject	<p>Pre-watch for marine fauna prior to DP operations will identify if any marine fauna are in sight prior to use of DP. This may reduce the instance of behavioural impacts to marine fauna, such as pygmy blue and humpback whale, which may be present given the operational area overlaps with their BIA (Table 4-7).</p> <p>A maximum of two vessels (an installation vessel and a general support vessel) will be on DP at any one time during the removal activities (refer Section 3.9). It should also be noted that DP is also not a constant during the</p>	Not applicable

¹⁹For safety reasons, the distance requirements below are not applied for a vessel holding station or with limited manoeuvrability; e.g. anchor handling, loading, back-loading, bunkering, close standby cover for overside working and emergency situations.

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>operations, but it is required during certain activities requiring the vessel to be stationary for periods. The noise impacts are anticipated to be temporary and minor and relate to behavioural changes only.</p> <p>Given the low risk of impacts associated with underwater noise and the low vessel use in the general vicinity of the field (refer to shipping density, Section 4.7.6), there is ample room for fauna to move away from noise sources without disrupting biologically important activities. The pre-watch from the vessel and delay of DP operations if necessary is disproportionate to the negligible benefit that may accrue.</p>	
<p>Dedicated marine fauna observers (MFOs) to implement PS 3.1.</p>	<p>Reject</p>	<p>The environmental benefit of having dedicated MFOs is a potential increase in the likelihood of detecting marine fauna, which then permits actions to maintain separation with marine fauna. The vessel crew, in particular the bridge crew, will watch for marine mammals during the petroleum activity. The increase in the likelihood of detecting marine fauna by the addition of MFOs is negligible. The cost of implementing dedicated MFOs during vessel activities would be hundreds of thousands of dollars and expose additional personnel to the health and safety risks of working at sea. The cost is grossly disproportionate to the environmental benefit.</p>	<p>Not applicable</p>

7.3.4.1 ALARP Summary

The risk assessment and evaluation has identified controls (**Table 7-12**) that when implemented are considered to manage the impacts of noise emissions on marine fauna to ALARP.

Woodside considers the control measures described above are appropriate to reduce impacts of noise emissions on marine fauna. Additional reasonable control measures were identified in **Table 7-12** 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.

7.3.5 Demonstration of Acceptability

Given the adopted controls, noise emissions will not result in potential impacts greater than temporary and minor displacement of marine fauna, such as cetaceans, marine reptiles, and fishes. Further opportunities to reduce the impacts have been investigated in **Table 7-12**.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the noise emissions of the project vessels have been raised by relevant stakeholders. The environmental

impacts meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social and equitable considerations.
- Precautionary principle: The noise emissions aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect. There is variability in the presence and timing of some environmental receptors that may be impacted by noise emissions; however, the nature and scale of the potential impacts pose no risk of serious or irreversible environmental impacts.
- Inter-generational principle: The noise emissions aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The noise emissions aspect will not impact upon biodiversity or ecological integrity.

Woodside has considered the *Conservation Management Plan for the Blue Whale; A Recovery Plan under the Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia, 2015) and the *Guidance on Key Terms within the Blue Whale Conservation Management Plan* (Commonwealth of Australia, 2021). Noise emissions from the activity will not credibly result in PTS, TTS, or physical harm, and hence will not injure pygmy blue whales. The pygmy blue whale foraging BIA off the Ningaloo Coast is approximately 20 km from the Operational Area. Sound transmission loss will result in underwater noise emissions from the petroleum activity being below the behavioural impact threshold within approximately 6 km of the noise source, hence behavioural impacts that may alter foraging behaviour are very unlikely to occur. Tagging studies show low residence time of pygmy blue whales within the foraging BIA, suggesting that it is not an important foraging area for pygmy blue whales. Tagging studies also show no evidence of altered migration behaviour in the migration BIA despite the presence of anthropogenic noise similar in nature and scale to those that will arise from the petroleum activity. Hence, the potential impacts of underwater noise emissions on pygmy blue whales are consistent with the *Conservation Management Plan for the Blue Whale; A Recovery Plan under the Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia, 2015).

During consultation, WAC and CCG provided feedback related to impacts from noise emissions during decommissioning activities. CCG provided feedback to Woodside that there is heightened potential of damage to the marine environment and wildlife during Woodside decommissioning activities, including increased potential negative impacts on migrating whales from marine noise (**Appendix F**). WAC asked about potential noise impact on whale communication. Woodside responded to WAC during the meeting to clarify that controls would be in place to reduce this risk, and no further concerns were raised following this meeting (**Appendix F**). Given impacts are anticipated to be temporary and minor behavioural disturbance to individuals and no impacts on a population level are expected to occur, cultural values and intangible cultural heritage associated with these species are expected to be maintained and no heightened damage to wildlife is expected to occur during the activities.

The area that may be impacted by noise emissions overlaps:

- the Gascoyne Marine Park
- pygmy blue whale BIAs identified by the *Conservation Management Plan for the Blue Whale* (Department of the Environment, 2015).

The potential impacts from and environmental management of noise emissions on the environmental values in the Gascoyne Marine Park and pygmy blue whale BIAs are consistent with the conservation objectives of the Gascoyne Marine Park (DNP, 2018) and the *Conservation Management Plan for the Blue Whale* (Department of the Environment, 2015) respectively.

Woodside considers the impact to be managed to an acceptable level.

7.3.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 7-13: Environmental performance outcomes, performance standards and measurement criteria for noise emissions

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 3 Noise emissions managed to limit impacts to marine fauna to short-term behavioural impacts only (severity level ≤ 2).</p>	<p>C 3.1 EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans, including the following measures²⁰:</p> <ul style="list-style-type: none"> ▪ vessels will not travel greater than six knots within 300 m of a cetacean or turtle (caution zone) and not approach closer than 100 m from a whale. ▪ vessels will not approach closer than 50 m for a dolphin or turtle and/or 100 m for a whale (with the exception of animals bow riding). ▪ if the cetacean or turtle shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than six knots. ▪ vessels will not travel greater than eight knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark. 	<p>PS 3.1</p> <ul style="list-style-type: none"> ▪ Compliance with EPBC Regulations 2000 – Part 8 Division 8.1 (Regulation 8.05 and 8.06) Interacting with cetaceans. 	<p>MC 3.1.1 Records demonstrate no breaches with EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans.</p>
	<p>C 3.2 Project vessel engines and other machinery are maintained as per PMS to ensure equipment is operating efficiently.</p>	<p>PS 3.2 Contractor has PMS to ensure engines and power generation equipment, compressors and machinery on the project vessels are</p>	<p>MC 3.2.1 Records demonstrate vessel Contractor maintenance has been satisfactorily completed as scheduled in PMS.</p>

²⁰For safety reasons, the distance requirements below are not applied for a vessel holding station or with limited manoeuvrability; e.g. anchor handling, loading, back-loading, bunkering, close standby cover for overside working and emergency situations.

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
		maintained.	

7.4 Atmospheric Emissions

7.4.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Atmospheric emissions	Atmospheric emissions from vessel engines and generators, and incinerators on vessel.	Localised and temporary reduction in air quality as a result of greenhouse gas (GHG) emissions, non-GHG emissions, particulates and volatile organic compounds.	10	N/A	-	Type A Low Order Impact	Tolerable

7.4.2 Source of Hazard

The project vessels use MDO to power vessel engines, generators, mobile and fixed plant and equipment and the incinerator for the duration of the infrastructure removal activities. The combustion of fuel and the incineration of waste on-board the vessels will generate emissions of greenhouse gases, such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and non-GHG such as sulphur oxides (SO_x) and nitrous oxides (NO_x), particulate material and volatile organic compounds. These emissions are associated primarily with project vessel fuel consumption and waste incineration.

7.4.3 Environmental Impact Assessment

Atmospheric emissions generated during the infrastructure removal activities will result in a localised, temporary reduction in air quality in the environment immediately surrounding the discharge point and present a negligible contribution to the GHG emissions. The closest residential area is Exmouth, 56 km to the south-east of the operational area. The quantities of atmospheric emissions will quickly dissipate into the surrounding atmosphere, therefore will not impact any residential areas. Gaseous emissions under normal circumstances quickly dissipate into the surrounding atmosphere. The impact of atmospheric emissions on air quality is anticipated to be temporary and minor, with no impacts to marine fauna.

7.4.4 Demonstration of As Low As Reasonably Practicable

A summary of the ALARP process for the environmental aspect is presented in **Table 7-14**. This process was completed as outlined in **Section 6.2** 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 7-14: Atmospheric Emissions - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Eliminate</i>			
Do not combust fuel.	Reject	Control is not considered feasible. There are no project vessels that do not use internal combustion engines.	Not applicable
No incineration of waste on the	Reject	With no incineration of waste on-board	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
project vessels.		the project vessels, waste would need to be stored and this would have an associated health and safety risk. The control is not feasible.	
Administrative			
Marine Order 97 (Marine Pollution Prevention – Air Pollution), which details requirements for: <ul style="list-style-type: none"> ▪ International Air Pollution Prevention (IAPP) Certificate, required by vessel class ▪ use of low sulphur fuel when available ▪ Ship Energy Efficiency Management Plan, where required by vessel class ▪ onboard incinerator to comply with Marine Order 97. 	Accept	Control may slightly reduce the likelihood of air pollution. Control based on legislative requirements and therefore must be adopted.	PS 4.1
Project vessel engines and other machinery are maintained as per PMS to ensure equipment is operating efficiently.	Accept	Maintenance and inspection completed as scheduled on PMS reduces the atmospheric emissions and associated impacts. Machinery maintenance is part of normal operations to ensure operating in accordance with manufacturer's guidelines. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 3.2

7.4.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 7-14**) that when implemented are considered to manage the impacts of atmospheric emissions from project vessels to ALARP. Woodside considers the control measures described above are appropriate to reduce the atmospheric emissions associated with the project vessels' operations. Additional reasonable control measures were identified in **Table 7-14** 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.

7.4.5 Demonstration of Acceptability

Given the adopted controls, the atmospheric emissions from project vessels will not result in potential impacts greater than temporary and minor. Further opportunities to reduce the impacts have been investigated in **Table 7-14**.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the atmospheric emissions from project vessels have been raised by relevant stakeholders. The

environmental impacts meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social and equitable considerations.
- Precautionary principle: The atmospheric emissions aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: Global warming will affect the ability for future generations to meet their needs. Atmospheric emission from the petroleum activity will contribute to the global inventory of GHGs in the atmosphere. These emissions make a very small contribution to Woodside's overall emissions and the petroleum activity cannot reasonably be completed without these GHG emissions.
- Biodiversity principle: Woodside recognises the threat global warming poses to biodiversity. However, the nature and scale of the atmospheric emissions aspect from the petroleum activity will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.4.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 7-15: Environmental performance outcomes, performance standards and measurement criteria for Atmospheric Emissions – interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 4 Atmospheric emissions comply with Marine Order requirements</p>	<p>C 4.1 Marine Order 97 (Marine Pollution Prevention – Air Pollution), which details requirements for:</p> <ul style="list-style-type: none"> ▪ International Air Pollution Prevention (IAPP) Certificate, required by vessel class ▪ use of low sulphur fuel when available ▪ Ship Energy Efficiency Management Plan, where required by vessel class ▪ onboard incinerator to comply with Marine Order 97. 	<p>PS 4.1 Project vessels compliant with Marine Order 97 (marine pollution prevention – air pollution) to restrict emissions to those necessary to perform the activity.</p>	<p>MC 4.1.1 Marine Assurance inspection records demonstrate compliance with Marine Order 97.</p>
	<p>C 3.2 (refer to Section 7.3.6)</p>	<p>PS 3.2 (refer to Section 7.3.6)</p>	<p>MC 3.2.1 (refer to Section 7.3.6)</p>

7.5 Routine Vessel Discharges

7.5.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Routine vessel discharges within the operational area	Routine discharge of sewage, grey water and putrescible wastes to marine environment from project vessels.	Localised and temporary reduction in water quality adjacent to the discharge point associated with minor increases in nutrients, salinity, temperature and oily water/ chemical residues.	10	N/A	-	Type A Low Order Impact	Tolerable
	Routine discharge of deck and bilge water to marine environment from project vessels.		10	N/A	-	Type A Low Order Impact	Tolerable
	Routine discharge of brine or cooling water to the marine environment from project vessels.		10	N/A	-	Type A Low Order Impact	Tolerable

7.5.2 Source of Hazard

During the activity, the project vessels will generate and routinely discharge to the marine environment treated sewage, grey water, putrescible (food) wastes and desalination brine, cooling water, bilge water and deck drainage, as described below.

7.5.2.1 Sewage, Grey Water and Food Waste

The volume of sewage, grey water and food wastes generated by the vessel is directly proportional to the number of persons on-board the project vessels. The total volume of sewage and grey water generated by the project vessels is estimated to be in the order of 5 m³ to 15 m³ per day, per vessel depending on persons on-board. Food waste generated is typically 1 L per person per day. This scale of discharge falls within the scope of the Environment Plan Reference Case – Planned Discharge of Sewage, Putrescible Waste and Grey Water (Green Light Environmental, 2017).

7.5.2.2 Desalination Brine Reject from Reverse Osmosis

Potable water is produced on-board the vessel using reverse osmosis machinery. Reverse osmosis is a membrane-technology filtration method that removes salt molecules and ions from seawater by applying pressure to the solution when it is on one side of a selective membrane. The result is that a brine solution with salinity elevated by around 10% is retained on the pressurised side of the membrane and the potable water can pass to the other side.

7.5.2.3 Cooling Water

Seawater is used as a heat exchange medium for cooling machinery engines on some vessels, others use air cooling. Seawater is pumped on board the vessel, passes through heat exchangers, and subsequently discharged from the vessel with temperature elevation in the order of 2 to 5 °C. Seawater used for cooling is dosed with chlorine after intake and discharged with low residual chlorine concentrations that are rapidly diluted by prevailing water currents.

7.5.2.4 Deck Drainage

No wastes contaminated with hydrocarbons or chemicals will be routinely discharged from the project vessel deck drains. Drainage from areas of a high risk of hydrocarbon or chemical contamination will be managed to ensure it has an oil content of less than 15 ppm before overboard discharge or sent to shore for disposal. Rainfall and washdown of the decks may result in minor quantities of chemical residues, such as detergent, oil and grease entering the deck drainage system and being possibly discharged overboard.

7.5.3 Environmental Impact Assessment

The water quality assessment undertaken in 2019 (Cardno, 2019) indicated that metal and hydrocarbon concentrations in surface waters within the operational area were low and consistent with reference sites and the region more broadly (**Section 4.3**). The project vessel discharges will be quickly dispersed and diluted such that any temporary change in water quality above those baseline values will be limited to the vicinity of the discharge point for a very short time. Marine fauna within the operational area are likely to be transient; however, they may be come in direct contact with the releases (by passing through the immediate discharge area). If contact does occur with any marine fauna, it will be for a short duration, such that exposure time may not be of sufficient duration to cause a toxic effect. Given the small volumes of discharges, the water depth of release and the rapid dilution, the likelihood of ecological impacts to marine fauna is highly unlikely. The next subsections examine in more detail the environmental impact of each of the identified routine vessel discharges.

The potential impacts associated with sewage, grey water and food waste discharges from vessels are discussed in detail in the Environment Plan Reference Case (Green Light Environmental, 2017). The impacts from routine project vessel discharges are considered to fall within the scope of this description since:

- the volume and types of discharge are consistent with the Reference Case limitations
- the discharges will not affect a (State or Commonwealth) marine reserve or occur within 3 NM of a World Heritage Property, National Heritage Place, Wetland of International Importance, or the Great Barrier Reef Marine Park
- the discharges are not inconsistent with management documentation for any EPBC Act-listed threatened or migratory species.

Studies of moving vessels have shown very high dispersion rates for effluents (Loehr et al., 2006). Mixing and dispersion would be facilitated in deep offshore waters of the operational area and through regional wind and large-scale current patterns. The potential environmental impact from routine vessel discharges is considered temporary and minor and relates to a localised reduction in water quality, with no significant impacts to marine fauna anticipated.

7.5.3.1 Brine Reject from Reverse Osmosis

The brine solution will be quickly dispersed and diluted to undetectable levels within a few metres of the discharge point. Given the relatively low volume of discharge, the relatively low increase in salinity and the open ocean environment, the discharge of reverse osmosis brine streams is considered temporary and minor and relates to a localised reduction in water quality, with no significant impacts to marine fauna anticipated.

7.5.3.2 Cooling Water

When discharged to sea, the cooling water will be subject to turbulent mixing and loss of heat to the surrounding waters. The area of detectable increase in seawater temperature is likely to be less than 10 m radius. The impact of cooling water discharge is considered temporary and minor and relates to a localised reduction in water quality, with no significant impacts to marine fauna anticipated.

7.5.3.3 Deck Drainage

Due to the small volumes of deck drainage, the very low levels of contaminants likely to be entrained in the discharge and the rapid dilution and dispersal that will result in the open ocean, the environmental effects will be temporary and localised. The discharge of deck drainage is considered temporary and minor and relates to a localised reduction in water quality, with no significant impacts to marine fauna anticipated.

7.5.3.4 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans for cetaceans and marine turtles that identify chemical discharges/pollution as a threat (**Section 9**). This includes the objectives and actions within *the Recovery Plan for Marine Turtles in Australia 2017–2027* (Commonwealth of Australia, 2017), which relate to discharges.

7.5.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 7-16**. This process was completed as outlined in **Section 6.2** 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 7-16: Routine vessel discharges – as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Storage, transport and treatment/disposal onshore of sewage, greywater, putrescible and bilge wastes.	Reject	This control would present additional safety and hygiene hazards resulting from the storage, loading and transport of the waste material. Distance of activity offshore also makes the implementation of this control not feasible.	Not Applicable
Engineer			
Marine Order 96 – Pollution prevention – Sewage (as appropriate to vessel class) which include the following requirements: <ul style="list-style-type: none"> ▪ Valid International Sewage Pollution Prevention (ISPP) Certificate ▪ Sewage systems that comply with Regulation 9 of Annex IV including a sewage treatment plant, sewage comminuting and disinfecting system and a sewage holding tank ▪ discharge of non-treated sewage will only occur >12 nm from the nearest land ▪ discharge of treated sewage using a certified sewage treatment plant will only occur at >3 nm from the nearest land ▪ discharge of sewage will occur at a moderate rate while vessel is in transit 	Accept	Controls based on legislative requirements, must be accepted. Reduces potential impacts of inappropriate discharge of sewage. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 5.1

Control Measure	Accept / Reject	Reason	Associated Performance Standards
at speed greater than 4 knots.			
Marine Order 95 – Pollution prevention – Garbage (as appropriate to vessel class) which requires putrescible waste and food scraps are passed through a macerator so that it is capable of passing through a screen with no opening wider than 25 mm.	Accept	Controls based on legislative requirements must be accepted. Reduces probability of garbage being discharged to sea. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 5.2
<p>Marine Order 91 – Oil (as relevant to vessel class) requirements, which include mandatory measures for the processing of oily water prior to discharge:</p> <ul style="list-style-type: none"> ▪ Machinery space bilge/oily water shall have International Maritime Organisation (IMO) approved oil filtering equipment (oil/water separator) with an online monitoring device to measure Oil in Water (OIW) content to be less than 15 ppm prior to discharge. ▪ IMO approved oil filtering equipment shall also have an alarm and an automatic stopping device or be capable of recirculating in the event that OIW concentration exceeds 15 ppm. ▪ A deck drainage system shall be capable of controlling the content of discharges for areas of high risk of fuel/oil/grease or hazardous chemical contamination. ▪ There shall be a waste oil storage tank available, to restrict oil discharges. ▪ In the event that machinery space bilge discharges cannot meet the oil content standard of <15 ppm without 	Accept	Controls based on legislative requirements must be accepted. Reduces potential impacts of planned discharge of oily water to the environment. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 5.3.1 PS 5.3.2

Control Measure	Accept / Reject	Reason	Associated Performance Standards
dilution or be treated by an IMO approved oil/water separator, they will be contained onboard and disposed of onshore. ▪ Valid International Oil Pollution Prevention Certificate.			
Where there is potential for loss of primary containment of oil and chemicals on the project vessel, deck drainage must be collected via a closed drainage system	Accept	Reduces the likelihood of contaminated deck drainage water being discharged to the marine environment. No change in consequence would occur. Benefits outweigh cost/sacrifice	PS 5.4

7.5.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 7-16**) that when implemented are considered to manage the impacts of routine vessel discharges from the project vessels to ALARP. Woodside considers the control measures described above are appropriate to reduce the potential impacts of routine vessel discharges from the project vessels. Additional reasonable control measures were identified in **Table 7-16** 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.

7.5.5 Demonstration of Acceptability

Given the adopted controls, the routine vessel discharges from the project vessels will not result in potential impacts greater than temporary and minor reduction in water quality. Further opportunities to reduce the impacts have been investigated in **Table 7-16**.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the routine vessel discharges from the project vessels have been raised by relevant stakeholders. The environmental impacts meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social and equitable considerations.
- Precautionary principle: The routine vessel discharges aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The routine vessel discharges aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The routine vessel discharges aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.5.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 7-17: Environmental performance outcomes, performance standards and measurement criteria for Routine Vessel Discharges – interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 5 Routine vessel discharges comply with Marine Order requirements</p>	<p>C 5.1 Marine Order 96 – Pollution Prevention – Sewage (as appropriate to vessel class) which include the following requirements:</p> <ul style="list-style-type: none"> ▪ Valid International Sewage Pollution Prevention (ISPP) Certificate ▪ Sewage systems that comply with Regulation 9 of Annex IV including a sewage treatment plant, sewage comminuting and disinfecting system and a sewage holding tank ▪ discharge of non-treated sewage will only occur >12 nm from the nearest land ▪ discharge of treated sewage using a certified sewage treatment plant will only occur at >3 nm from the nearest land ▪ discharge of sewage will occur at a moderate rate while vessel is in transit at speed greater than 4 knots. 	<p>PS 5.1 Project vessels compliant with Marine Order 96 – Marine Pollution Prevention – Sewage.</p>	<p>MC 5.1.1 Records demonstrate project vessels are compliant with Marine Order 96.</p>
	<p>C 5.2 Marine Order 95 – Pollution Prevention – Garbage (as appropriate to vessel class) which requires putrescible waste and food scraps are passed through a macerator so that it is capable of passing through a screen with no opening wider than 25 mm.</p>	<p>PS 5.2 Project vessels compliant with Marine Order 95 – Marine Pollution Prevention – Garbage.</p>	<p>MC 5.2.1 Records demonstrate project vessels are compliant with Marine Order 95.</p>

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<p>C 5.3 Marine Order 91 – Oil (as relevant to vessel class) requirements, which include mandatory measures for the processing of oily water prior to discharge:</p> <ul style="list-style-type: none"> ▪ Machinery space bilge/oily water shall have International Maritime Organisation (IMO) approved oil filtering equipment (oil/water separator) with an online monitoring device to measure Oil in Water (OIW) content to be less than 15 ppm prior to discharge. ▪ IMO approved oil filtering equipment shall also have an alarm and an automatic stopping device or be capable of recirculating in the event that OIW concentration exceeds 15 ppm. ▪ A deck drainage system shall be capable of controlling the content of discharges for areas of high risk of fuel/oil/grease or hazardous chemical contamination. ▪ There shall be a waste oil storage tank available, to restrict oil discharges. ▪ In the event that machinery space bilge discharges cannot meet the oil content standard of < 15 ppm without dilution or be treated by an IMO approved oil/water separator, they will be contained onboard and disposed of onshore. ▪ Valid International Oil Pollution Prevention Certificate. 	<p>PS 5.3.1 Project vessels compliant with Marine Order 91 – Marine Pollution Prevention – Oil.</p>	<p>MC 5.3.1 Records demonstrate project vessels are compliant with Marine Order 91.</p>
		<p>PS 5.3.2 Discharge of machinery space bilge/oily water meet oil content standard of less than 15 ppm without dilution.</p>	<p>MC 5.3.2 Records demonstrate discharge specification met for project vessels</p>
	<p>C 5.4 Where there is potential for loss of primary</p>	<p>PS 5.4 Contaminated drainage contained,</p>	<p>MC 5.4.1 Records demonstrate project vessels has a</p>

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	containment of oil and chemicals on the project vessel, deck drainage must be collected via a closed drainage system	treated and/or separated before discharge.	functioning bilge/oily water management system.

7.6 Seabed Disturbance

7.6.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Physical disturbance to seabed	Subsea infrastructure removal, including temporary setdown of infrastructure on the seabed.	Disturbance of seabed habitat and associated communities.	10	N/A	-	Type A Low Order Impact	Tolerable
	ROV use during subsea infrastructure removal and field management.		10	N/A	-	Type A Low Order Impact	Tolerable

7.6.2 Source of Hazard

7.6.2.1 Subsea Infrastructure Removal

Equipment recovery preparation activities may include relocating sediment that has built up around subsea infrastructure to facilitate access for removal activities to commence. Relocating sediment involves using an ROV-mounted suction pump/dredging unit, with sediment relocated nearby.

As described in **Table 3-5**, several pieces of subsea infrastructure are partially buried, such as flowlines and umbilicals. During the removal activities the sediments will covering this infrastructure will be disturbed.

Subsea cleaning and preparation activities may be required to remove marine growth from the subsea infrastructure to gain access to lifting points. Those cleaning activities that have potential to impact the seabed include use of high-pressure water and brushes on ROVs.

Removal of the wellheads will involve cutting using a mechanical tool or a diamond wire saw, which may result in localised sediment relocation and temporary increase in turbidity. A small amount of carbon steel swarf

Subsea infrastructure and wellheads may be set down on the seabed in the immediate vicinity of removal for a period to enable safe rigging before recovery. Placement of the subsea infrastructure and wellheads on the seabed will result in temporary seabed disturbance and causing turbidity and increased suspension of sediment.

Subsea cleaning and preparation activities include removing marine growth from the wellhead and relocating sediment that has built up to gain access for removal activities.

Marine growth may be removed in a variety of ways. Those that have potential to impact the seabed include use of high-pressure water and brushes on ROVs.

7.6.2.2 Remotely Operated Vehicle

Use of the ROV during the petroleum activity may result in temporary seabed disturbance and suspension of sediment, causing increased turbidity and suspended sediment from working close to, or occasionally on, the seabed. ROV used close to or on the seabed is limited to that required for effective and safe subsea activities.

7.6.3 Environmental Impact Assessment

Results from the pre-decommissioning environmental survey within the Stybarrow field (Cardno, 2019) are presented in **Section 4.3**. This survey found that sediment contamination was localised to areas of disturbance (e.g., drilling centres) with low levels of infauna and demersal fauna, which is consistent with other locations of similar depths (**Section 4.4.1**).

Activities such as operating the ROV near the seabed, relocating sediment and placing subsea infrastructure and wellheads on the seabed before recovery may result in seabed disturbance and elevated turbidity in the water column. Given the concentrations of potential contaminants in sediments were all below the guideline value-high concentrations (Commonwealth of Australia and New Zealand Government, 2018), elevated turbidity and seabed disturbance is not anticipated to have toxic impacts to marine fauna in the water column, or toxic impacts to smothered benthic habitats.

Concentrations of the sediment radionuclides (including NORM) were low and uniform, with small variations attributed to depth and/or variations in sediment size and were therefore thought representative of background conditions at all stations (Cardno, 2019). Radiation assessments of the Stybarrow equipment found very low levels of NORMs, with little NORMs apparently deposited in equipment during production (SA Radiation, 2018). No impacts from NORMs are therefore anticipated during seabed disturbance.

Elevated turbidity and disturbance of seabed habitat and associated communities from the petroleum activity are confined to sediment burrowing infauna and surface epifauna invertebrates, such as filter feeders in the immediate vicinity. These species are considered to have low sensitivity to localised physical disturbance of subsea infrastructure and wellheads. Any impacts are anticipated to be localised and minor, given the low densities of benthic organisms (refer **Section 4.3**) and representation of the infauna communities within the operational area and the broader region.

The operational area overlaps the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula and Continental Slope Demersal Fish Communities KEFs; therefore, seabed disturbance may directly disturb a very small, localised area of the key ecological feature (KEF). Any disturbed areas are anticipated to recolonise over a 12-month period, any impact is determined to be temporary, localised, and minor.

7.6.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 7-18**. This process was completed as outlined in **Section 6.2** 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 7-18: Seabed disturbance – as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Eliminate ROV use	Reject	The use of ROVs (including work close to or occasionally landed on the seabed) is required during wellhead removal and field management activities. ROV usage is already limited to only that required to conduct the work effectively and safely.	-
Eliminate equipment removal	Reject	Leaving all equipment <i>in-situ</i> has been investigated. The base case in accordance with	-

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>General Direction 833 is to remove subsea infrastructure.</p> <p>Woodside has identified several equipment groups as candidates for abandonment <i>in situ</i> – anchors and residual chains, suction piles, and the Eskdale-1 wellhead. These equipment groups are largely or completely buried.</p>	
Eliminate sediment relocation	Reject	Sediment relocation is required to safely remove the subsea infrastructure. The sediment relocation is limited to the immediate area of the infrastructure. It is not feasible to eliminate the sediment relocation.	-
Engineer			
Level seabed disturbed by decommissioning activities	Reject	<p>Depressions in the seabed are visible from installation activities, and it is likely that removal of equipment will also result in further disturbance to the seabed. Such disturbance is localised to the within 10s of metres of the equipment, with changes in height of the seabed typically < 1 m. Such depressions in the seabed may impact upon mobile epibenthic fauna by impeding their movement.</p> <p>The seabed could be levelled to reduce or eliminate changes in height of the seabed. This is typically done by a vessel dragging a bar or chain along the seabed to redistribute and level sediments. This methodology would be challenging to implement successfully given the water depth of the operational area. An alternative method would be to use an ROV is a suitable tool (e.g., water jet) to relocate sediment. This method would be time-consuming, resulting in longer duration of vessel-related costs and environmental impacts. Levelling of the seabed would result in resuspension of sediments, which are characterised by substantial silt- and clay-sized particle fractions (Figure 4-4). These size fractions have relatively low settling velocities, and hence there is the potential for sediment plumes to cause impacts beyond the operational area. Isolated areas of sediment contamination around drilling centres could also be resuspended, potentially remobilising contaminants.</p> <p>The environmental impact from depressions in the seabed is considered negligible. The feasible methods level the seabed result in additional environmental impacts and costs, which are grossly disproportionate to the environmental benefit. Hence, the control is rejected.</p>	-

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Administrate			
Additional environmental monitoring of the seabed before the petroleum activity to assess any impacts to the seabed.	Reject	A pre-abandonment environmental survey has been completed, with results summarised in Section 4.3 . Concentrations of potential contaminants were generally low, with all below the guideline value-high concentrations. The disturbance of the seabed is therefore not anticipated to present an impact greater than temporary and minor. Any further environmental monitoring post removal of subsea infrastructure is unlikely to identify significant difference from the Cardno (2019) results. Control grossly disproportionate. Monitoring will not reduce the consequence of any impacts to the seabed, and the costs associated with the level of monitoring required to accurately assess any impacts greatly outweighs the benefits.	-
Inspection and remediation (if required) of the seabed to confirm that no unacceptable damage to the seabed remains at the end of this EP.	Accept	NOPSEMA's <i>Section 270 Consent to Surrender Title – NOPSEMA Advice (2022)</i> policy requires that unacceptable impacts and risks to the seabed and subsoil have been remediated to enable unrestricted access, beneficial use and re-release for future use.	PS 6.1
Environmental monitoring program to confirm no unacceptable contamination or damage to the seabed or subsoil, caused by titleholder activities, exists within the title.	Accept	Survey results will be used to demonstrate that General Direction 833 and Section 270 requirements have been met (Sections 2.1.1.1 and 2.4).	PS 6.2
Unexpected finds of potential Underwater Cultural Heritage sites/features, including First Nations UCH, are managed in accordance with an Unexpected Finds Procedure set out in Section 11.4 .	Accept	Allows management of new finds in accordance with legislative requirements (including Underwater Cultural Heritage Guidance for Offshore Developments and the DRAFT Guidelines to Protect Underwater Cultural Heritage under the UCH Act), expert advice and community expectations.	PS 15.1
Report any potential underwater cultural heritage finds to relevant stakeholders and authorities in accordance with the Unexpected Finds Procedure, Underwater Cultural Heritage Act 2018 and the ATSIHP Act.	Accept	Meets legislative requirements and community expectations.	PS 15.2
Relevant vessel crew and ROV operators will be advised in an induction of the potential to encounter	Accept	Ensures workforce are suitably aware of legal and process requirements for managing cultural features and heritage values.	PS 15.3

Control Measure	Accept / Reject	Reason	Associated Performance Standards
UCH and requirement to follow the Unexpected Finds Procedure (C 15.2).			
Pollution Control			
Recover contaminated sediment from the seabed for disposal onshore	Reject	<p>There is evidence of very localised contamination around drilling centres, which is likely to be the result of discharges of drilling fluids and cuttings from riserless drilling (Section 4.4.1). There may also be discharges of sand to the seabed during cutting and recovery of the blocked H4 flowline (Section 3.7.3), which Woodside will attempt to contain (see PS 7.7.1, Section 7.7.4). Sampling to date indicates that contamination is highly localised.</p> <p>Contaminated sediments could be recovered from the seabed and disposed of onshore. This would potentially reduce sediment contamination. Recovery of sediment would require disturbance to the sediment; for example, recovery using a mechanical device (e.g., van Veen grab) or dredge. This would remobilise some of the sediment which is attempting to be recovered. Remobilisation of contaminated sediments may result in wider distribution of contaminants. This may reduce the concentration of contaminants but distribute them more widely.</p> <p>Sediment contamination is highly localised, and the sedimentary environment is depositional, with little evidence of reworking or sediment transportation. The potential contaminants identified (barium, boron, lead, and mercury) exceed the</p>	-

7.6.4.1 ALARP Summary

Impacts are considered localised and minor from seabed disturbance impacts. Reasonable control measures were identified in **Table 7-18** 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.

7.6.5 Demonstration of Acceptability

Seabed disturbance impacts will not result in potential impacts greater than temporary and minor reduction in water quality and disturbance to seabed habitat. Further opportunities to reduce the impacts have been investigated in **Table 7-18**.

No concerns or objections regarding seabed disturbance have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (**Section 9**). The environmental impacts meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social and equitable considerations.

- Precautionary principle: The seabed disturbance aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The seabed disturbance aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The seabed disturbance aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

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7.6.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 7-19: Environmental performance outcomes, performance standards and measurement criteria for seabed disturbance

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 6</p> <p>Unacceptable damage to the seabed or subsoil from activities in the title area has been made good and conservation and protection of natural resources²¹ has been provided for in WA-32-L at the conclusion of decommissioning activities.</p> <p>Environmental monitoring program confirms no impacts to benthic habitats greater than a severity level of 2²² within the operational area during the petroleum activity.</p>	<p>C 6.1</p> <p>Inspection and remediation (if required) of the seabed to confirm that no unacceptable damage to the seabed remains at the end of this EP.</p>	<p>PS 6.1</p> <p>Inspection and remediation (if required) of the seabed to confirm that no unacceptable damage to the seabed remains at the end of this EP.</p>	<p>MC 6.1.1</p> <p>Decommissioning clearance survey following equipment removal demonstrates that any damage to the seabed is acceptable and ALARP (see Section 3.8.2).</p>
	<p>C 6.2</p> <p>Environmental monitoring program to confirm no unacceptable contamination or damage to the seabed or subsoil, caused by titleholder activities, exists within the title area.</p>	<p>PS 6.2.1</p> <p>Environmental monitoring program assessing chemical contamination of sediment and physical modification of seabed and subsoil from titleholder activities will be conducted within 12 months following removal activities, as per Section 3.8.2. Results of monitoring will be used to assess any impacts caused by titleholder activities on:</p> <ul style="list-style-type: none"> ▪ ecosystem function ▪ target species for any currently known fisheries ▪ hydrocarbons and other mineral resources of the seabed and subsoil. 	<p>MC 6.2.1</p> <p>The Environmental monitoring program will include a decommissioning sediment sampling survey designed by a suitably qualified professional, to confirm chemical contamination is below relevant sediment quality threshold and background levels.</p> <p>Results of Environmental monitoring program demonstrates that any identified contamination or damage to the seabed is acceptable and ALARP (see Section 3.8.2).</p>
		<p>PS 6.2.2</p> <p>Where environmental monitoring identifies unacceptable contamination or damage to the seabed or subsoil caused by titleholder activities within the title, Woodside will conduct remediation and/or ongoing monitoring, if required.</p>	

²¹ As defined in the OPGGS Act: "natural resources has the meaning given by Article 77, paragraph 4 of the United Nations Convention on the Law of the Sea (UNCLOS), which states: "The natural resources referred to in this Part consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil."

²² Defined as 'Measurable but limited impact (< 1 year) on marine environment, limited community impact (< 1 month)'

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 15 Avoid, or where not possible, minimise impacts to cultural features.</p>	<p>C 15.1 Unexpected finds of potential Underwater Cultural Heritage sites/features, including First Nations UCH, are managed in accordance with an Unexpected Finds Procedure set out in Section 11.4.</p>	<p>PS 15.1.1 In the event that an Underwater Cultural Heritage site or feature is identified, implement an Unexpected Finds Procedure set out in Section 11.4.</p>	<p>MC 15.1.1 No non-compliance with the Unexpected Finds Procedure.</p>
	<p>C 15.2 Report any potential UCH finds to relevant stakeholders and authorities in accordance with the Unexpected Finds Procedure, <i>Underwater Cultural Heritage Act 2018</i> and the ATSIHP Act.</p>	<p>PS 15.2.1 Report any finds of potential UCH in accordance with the Unexpected Finds Procedure (Section 11.4) including to the Australasian Underwater Cultural Heritage Database.</p>	<p>MC 15.2.1 Records of potential UCH finds reported to relevant authorities and stakeholders.</p>
	<p>C 15.3 Relevant vessel crew and ROV operators will be advised in an induction of the potential to encounter UCH, and of their requirement to follow the Unexpected Finds Procedure (C 15.2).</p>	<p>PS 15.3.1 Relevant vessel crew (including ROV operators) are made aware of the requirements of the Unexpected Finds Procedure through an induction.</p>	<p>MC 15.3.1 Records demonstrate vessel crew are made aware of potential to encounter UCH.</p>

7.7 Subsea Discharges

7.7.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Planned subsea discharges	Discharge of seawater	Localised and temporary reduction in water quality	10	N/A	-	Type A Low Order Impact	Tolerable
	Discharge of chemicals during removal of subsea infrastructure and wellheads.		10	N/A	-	Type A Low Order Impact	Tolerable
	Release of metal and plastic swarf during cutting of infrastructure		10	N/A		Type A Low Order Impact	Tolerable
	Use and discharge of marine growth removal chemicals.		10	N/A	-	Type A Low Order Impact	Tolerable
	Release of contents of H4 flowline: <ul style="list-style-type: none"> ▪ Hydrocarbons ▪ Sand ▪ Produced water 	Temporary decrease in water quality. Potential toxic effects on marine fauna	30	N/A	-	Type A Low Order Impact	Tolerable

7.7.2 Source of Hazard

7.7.2.1 Discharge of Seawater

During equipment recovery, flowlines, risers and umbilicals will be severed from subsea equipment and recovered to a vessel (**Section 3.7**), which will result in the current contents being released to the marine environment.

Flowlines and risers were left filled with seawater. Residual hydrocarbon concentrations were reduced to 30 ppm during cessation flushing activities.

7.7.2.2 Discharge of Umbilical Contents

The chemical inventory of the umbilicals is provided in **Table 3-15**. The naphtha-based demulsifier has the greatest potential for impact of the umbilical contents. The water-based hydraulic fluid is non-CHARMable and listed as Group C under the OCNS. The methanol, ethylene glycol and trisodium phosphate (scale inhibitor) are listed as PLONOR by the OSPAR Commission and hence have little potential for impact.

The umbilical cores were not flushed during production cessation, with the exception of some methanol cores. The recovery of the umbilicals is expected to release the contents of the umbilicals as they are reeled during recovery. The contents may be released at the seabed and in the water column.

7.7.2.3 Discharges During Cutting and Removal of Infrastructure

Displacement fluids above the top cement plug within the wellhead and casing annulus fluids will be discharged during the removal. These include residual quantities of drilling fluids, corrosion inhibitor and biocide.

Small amounts of swarf may be discharged when the risers are cut from the DTM, when the H4 flowline is sectioned, and where wellheads are removed. The amount of swarf released will depend on the cutting method. Typical cuttings methods are a diamond wire cutter and hydraulic shears. The diamond wire cutter will typically generate more swarf, as the shearing motion of hydraulic shears is not expected to generate swarf. The volumes of swarf generated by diamond wire saws is expected to be < 100 g per cut as the saw kerf is relatively narrow (typically 1 mm width).

Operational experience indicates NORM from produced fluids may be deposited within scale in flowlines and risers. Radiation surveys were undertaken in 2018 at 442 points along the Stybarrow flowlines and risers using an external radiation meter to quantify radioactivity from NORM (SA Radiation, 2018b). This survey showed radiation levels were below the limits of detection of the meter. Based on these radiation measurements, SA Radiation concluded that NORM was at very low levels or may not be present at all in the flowlines and risers. To further quantify radioactivity from NORM, 1.5 m sections of 8-inch production flowline and 6-inch production riser were recovered from parts of the production system that were likely to have scale deposits. Thin (< 1 mm thickness) deposited of scale were observed within the grooves of the H4 production flowline sample; no scale was observed in the EH-1 production riser sample. Measured specific activity of a sample of the scale was 141 Bq/g radium-226 and 150 Bq/g radium-228. Based on the measured levels of activity by the external radiation survey and the analysis of the thin scale from the H4 flowline, SA Radiation (2018) concluded the amount of NORM in the Stybarrow flowlines and risers was low and posed little environment risk.

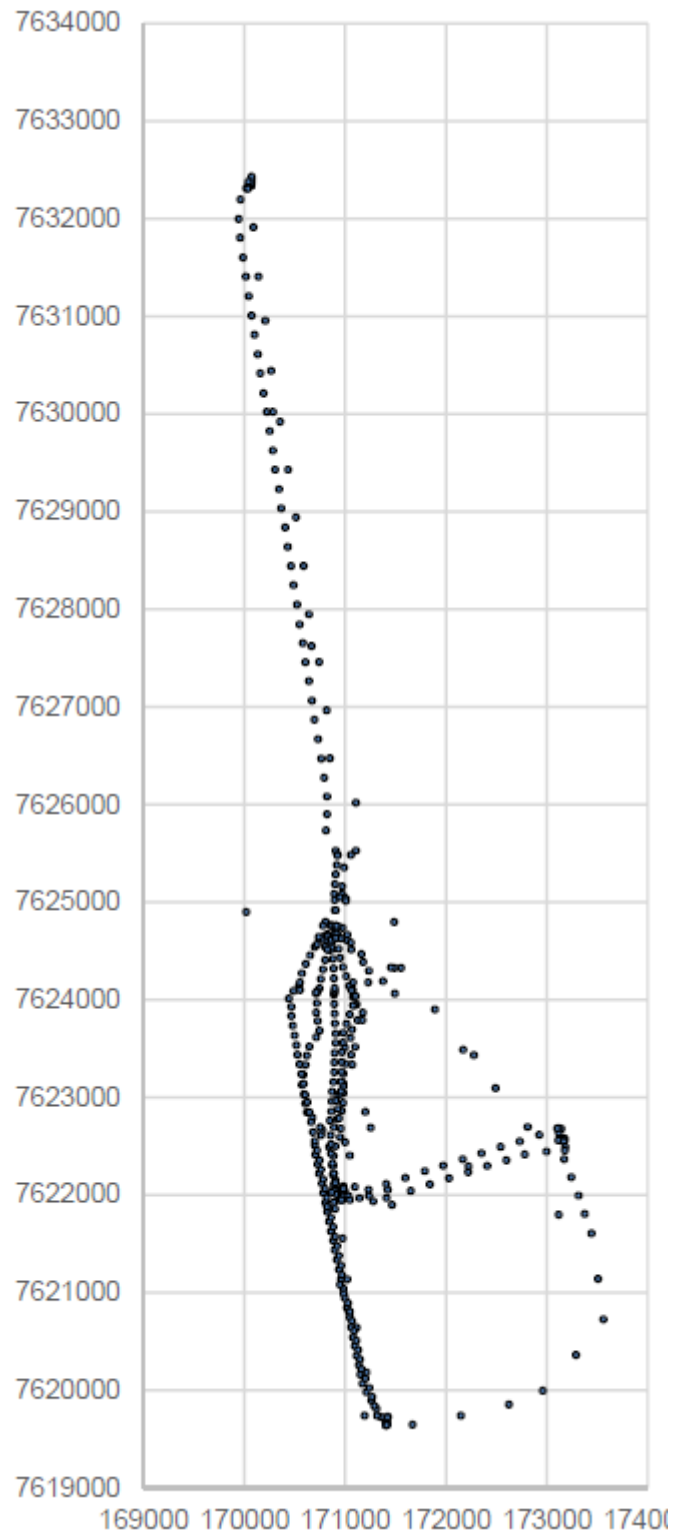


Figure 7-2: Radiation sampling locations along Stybarrow flowlines and risers (SA Radiation, 2018b)

Mercury is often present at varying concentrations in oil and gas reservoirs and can subsequently be deposited within oil and gas processing equipment. Production fluid systems may contain several mercury species due to the multi-phase nature of the fluids (Kho et al., 2022). The scale recovered from the section of 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. The limits of reporting were all below the 0.15 mg/kg DGV

concentration for mercury established by the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia and New Zealand Government, 2018).

7.7.2.4 Discharge of Marine Growth Removal Chemicals

Marine growth and scale from subsea infrastructure may be removed using ROVs to expose lifting points or gain visualisation during field management. The cleaning process involves water jetting and blasting to remove marine growth. The removed material will enter the water column immediately adjacent to the subsea infrastructure and, depending on the size and density of the material, will either be dispersed with the prevailing currents or sink to the seafloor. An acidification agent (such as citric acid or sulfamic acid) may be added to jetting water to facilitate the marine growth removal. The removal will be a highly targeted process and the volumes of water and chemicals involved will typically be < 1 m³. There is very little marine growth on the Stybarrow equipment, and little (if any) marine growth removal is expected to be required.

7.7.2.5 Release of H4 Flowline Contents

The H4 flowline was blocked during production and contains produced water, sand, oil, gas hydrates and seawater (**Section 3.6.2.1**). Atteris (2021) estimated the worst-case volumes of the flowline contents:

- Produced water: 51.89 m³
- Sand: 30 m³
- Oil (Stybarrow crude): 14.03 m³
- Hydrate: 2.01 m³
- Seawater: 3.3 m³

Woodside will undertake a densitometry inspection of the H4 flowline using an external inspection tool to better understand the distribution of these contaminants within the flowline. The densitometry inspection will better delineate the distribution of contaminants by variations in density. This method can differentiate oil, water and sand, but cannot reliably differentiate gas hydrates.

Of the contents within the H4 flowline, the Stybarrow crude has the greatest potential for environmental impacts from toxic and physical effects. Stybarrow crude is a Group IV oil (heavy-persistent) based on categorisation and classification by International Tanker Owners Pollution Federation (2011). It has a high density of 916.9 kg/m³ (API of 22.8) and a low pour point of -36 °C. The characteristics of Stybarrow crude are summarised in **Table 7-20** and **Table 7-21**.

Table 7-20: Summary of physical properties of Stybarrow crude (RPS, 2022a)

Characteristic	Stybarrow Crude
Density (kg/m ³)	916.9 (at 15 °C)
API	22.8
Dynamic Viscosity (cP)	45.5 (at 20 °C)
Pour Point (°C)	-36
Wax Content (%)	16.8
Asphaltenes (%)	< 0.5
Hydrocarbon Property Category	Group 4
Hydrocarbon Property Classification	Heavy persistent

Table 7-21: Boiling point ranges for Stybarrow crude

Oil Type	Component	Volatile (%)	Semi-volatile (%)	Low Volatility (%)	Residual (%)
	Boiling Point (°C)	<180 (C ₄ -C ₁₀)	180-260 (C ₁₁ -C ₁₅)	260-380 (C ₁₆ -C ₂₀)	>380 >C ₂₀
Stybarrow crude	% of total	3.1	23.7	30.6	42.6

Woodside commissioned a hydrocarbon spill modelling study from RPS (2022a) to inform the assessment of environmental impacts from the worst-case planned release of Stybarrow crude from the H4 flowline. The model simulated the release of 14 m³ of Stybarrow crude released from the H4 flowline on the seabed from 10 progressive release locations (simulating the multiple cut locations) over 125 hours, which was considered to be representative of the H4 flowline release scenario within the constraints of the modelling software. The release locations modelled are shown in **Figure 7-3**.

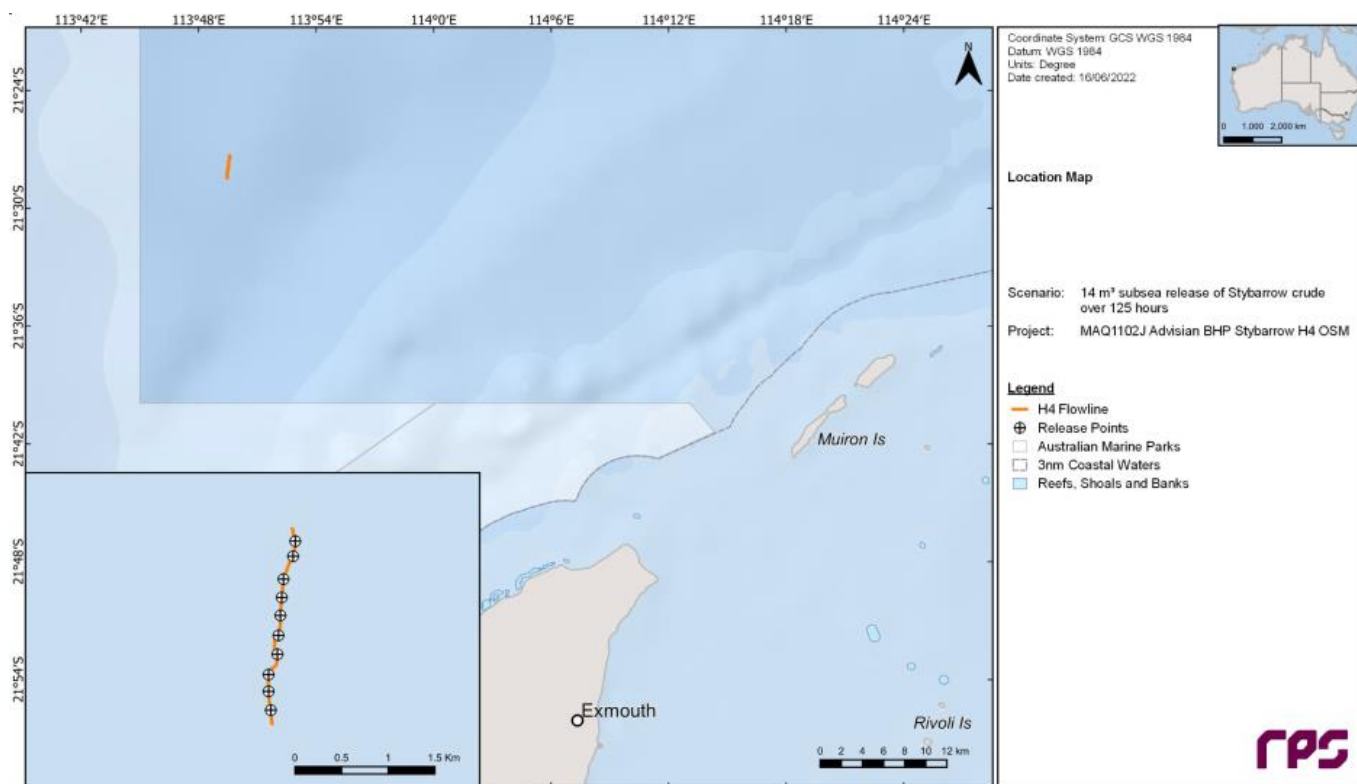


Figure 7-3: H4 flowline release locations for the hydrocarbon spill modelling study (RPS, 2022a)

Three deterministic simulations were run (one per season – summer, transitional and winter) based on the start dates which had resulted in the largest area of floating oil exposure above the lowest threshold of 1 g/m² from the marine diesel spill modelling study used to inform the vessel collision hydrocarbon spill scenario presented in **Section 8.2** (RPS, 2022b). The model tracked each simulated release for 10 days. The H4 flowline modelling study utilised the same environmental data (e.g. winds, currents, water temperature and salinity) as was used for the marine diesel spill study (RPS, 2022b). These model conditions were considered to be representative of a worst-case release of crude oil for each season modelled. The modelling study considered the same hydrocarbon exposure thresholds for floating, entrained, dissolved and shoreline oil phases as the vessel collision risk assessment (refer to **Table 8-4**).

Key results from the modelling study were:

- No exceedance of any dissolved, entrained or shoreline accumulation thresholds in any season
- Patchy and limited floating hydrocarbons exceeding the 1 g/m² socio-economic floating oil threshold, but no exceedance of the 10 g/m² ecological impact threshold

- Oil released from the H4 flowline took just over 2 hours to reach the sea surface from the release locations (825 m water depth)
- Floating oil on the surface reached a peak volume of 8 m³ in five days during the winter conditions simulation.

The spatial extent of floating oil predicted by the modelling study during summer, transitional and winter conditions are provided in **Figure 7-4**, **Figure 7-5** and **Figure 7-6**. The weathering plot from the winter season (with the lowest rate of evaporation) is shown in **Figure 7-7**.

Based on the relatively low concentrations of dispersed hydrocarbons predicted by the modelling study, Woodside determined that a stochastic modelling study was not required to inform the assessment of impacts of the release of Stybarrow crude from the H4 flowline.

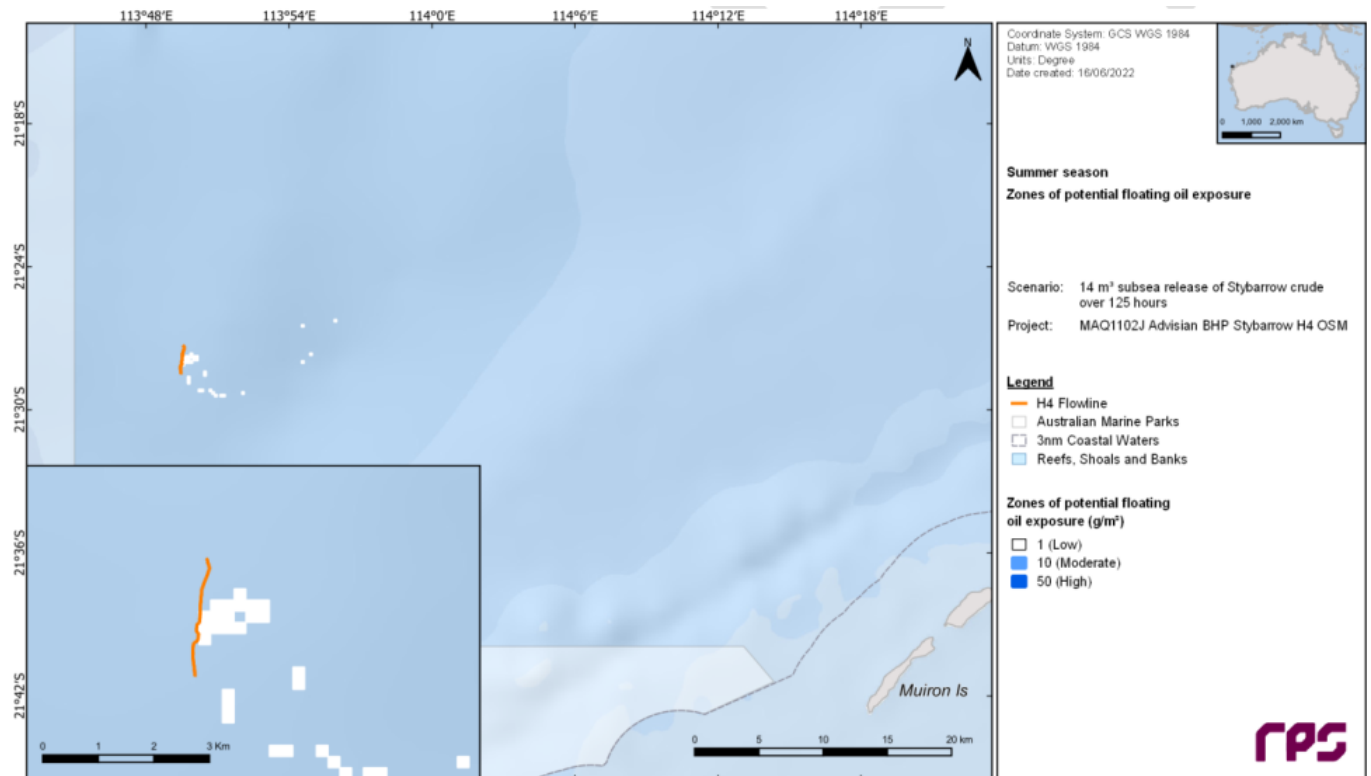


Figure 7-4: Predicted extent of the floating oil exposure over the 10-day simulation during summer conditions, following a 14 m³ crude subsea release of crude over 125 hours from the H4 flowline (RPS, 2022a)

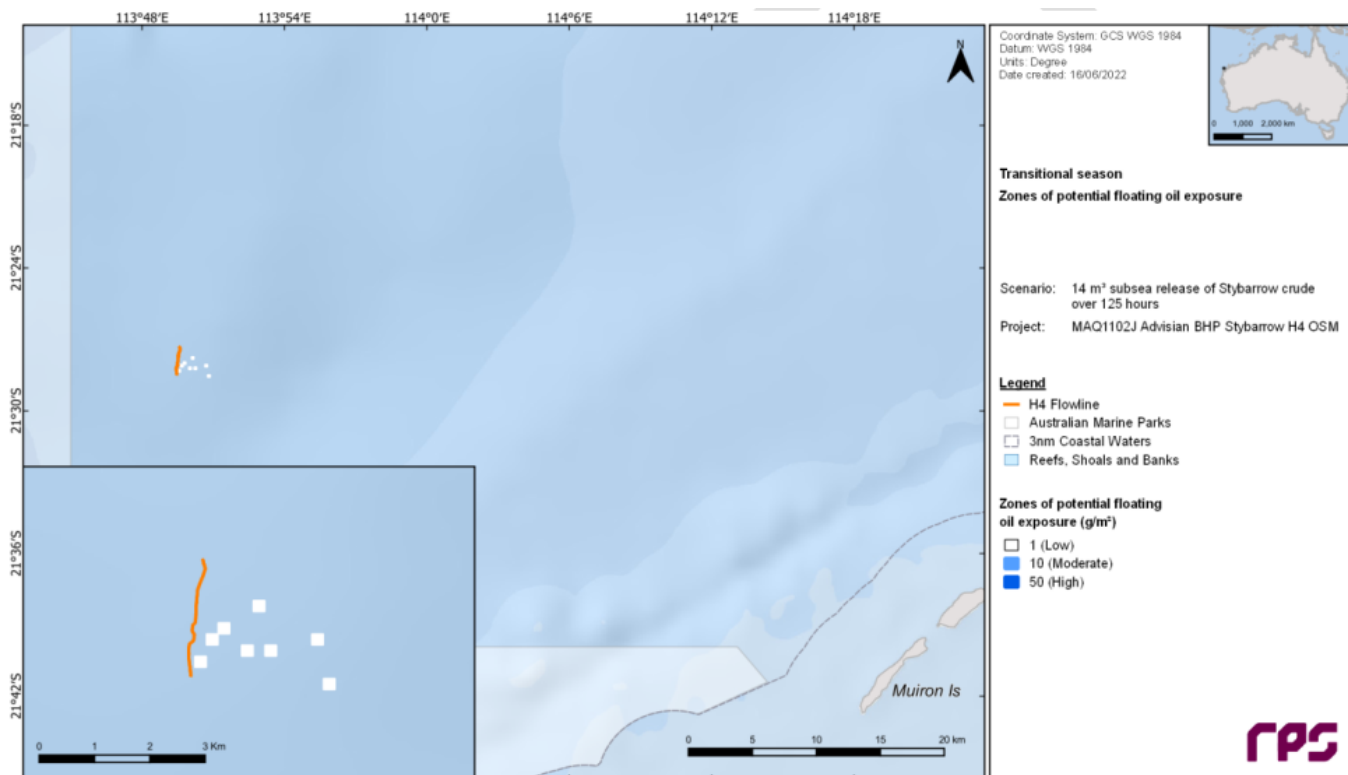


Figure 7-5: Predicted extent of the floating oil exposure over the 10-day simulation during transitional conditions, following a 14 m³ crude subsea release of crude over 125 hours from the H4 flowline (RPS, 2022a)

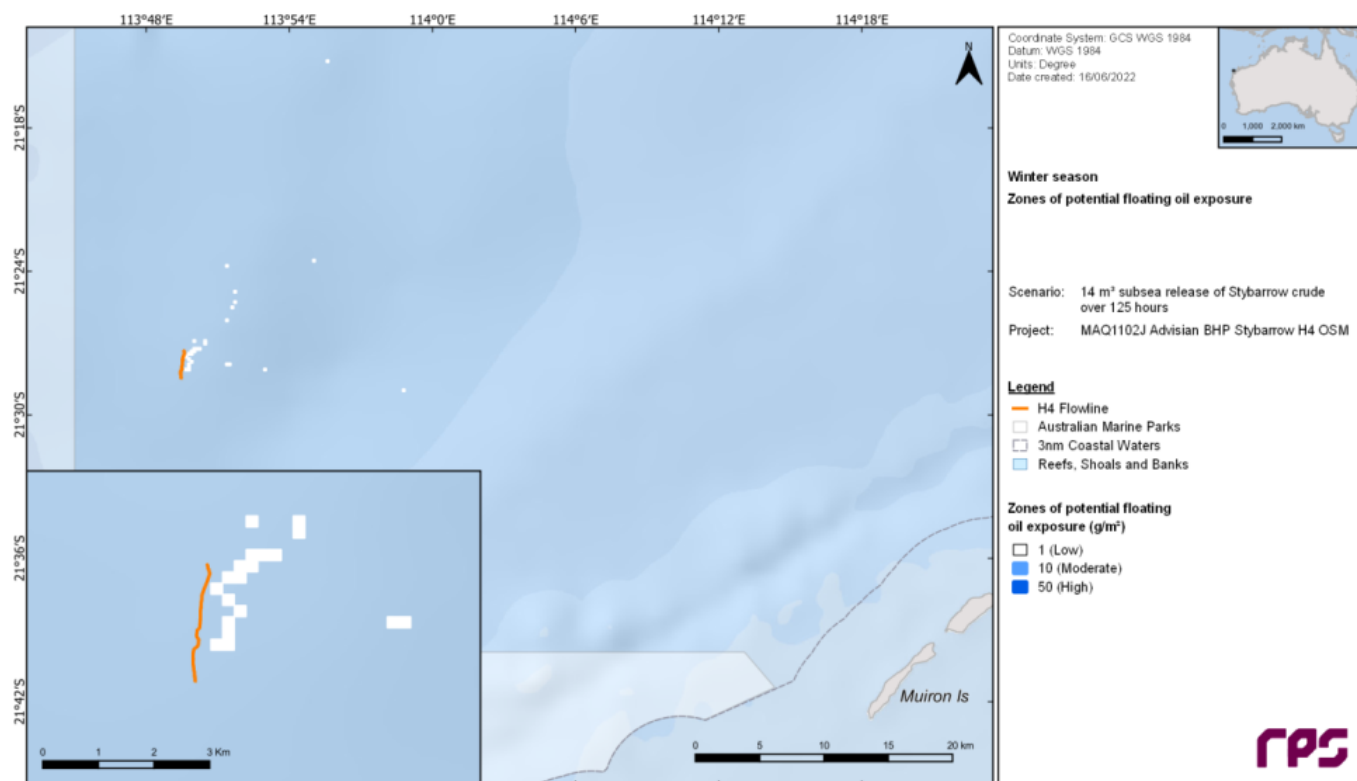


Figure 7-6: Predicted extent of the floating oil exposure over the 10-day simulation during winter conditions, following a 14 m³ crude subsea release of crude over 125 hours from the H4 flowline (RPS, 2022a)

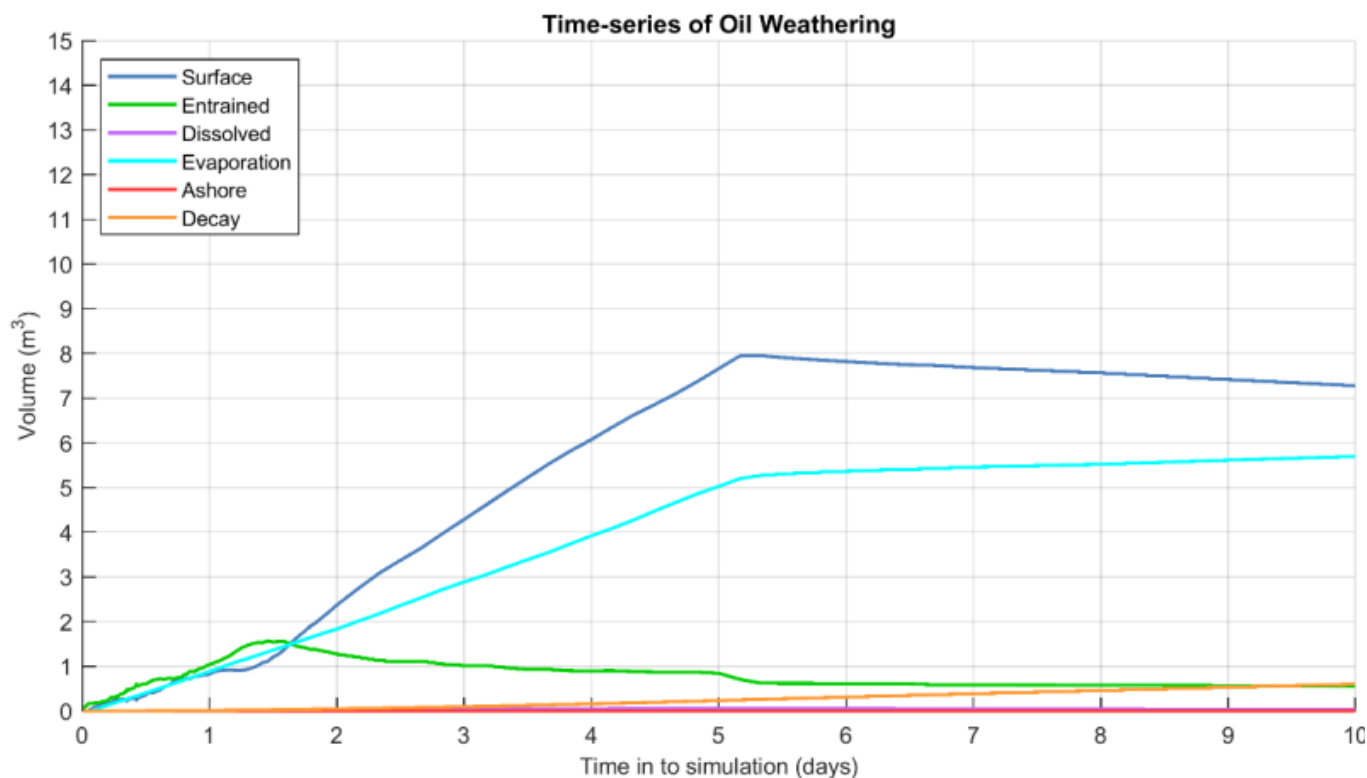


Figure 7-7: Predicted weathering and fates for the simulation during winter conditions, following a 14 m³ crude subsea release of crude over 125 hours from the H4 flowline (RPS, 2022a)

7.7.3 Environmental Impact Assessment

Discharges of seawater from the flowlines and risers will occur due to hydrostatic pressure at the seabed from the *in situ* end as the flowlines and risers are recovered. The discharge of seawater from the flowlines and risers will mix and dilute in the receiving waters. Flowlines and risers will be recovered one at a time, with the ensuing time between the recovery of each line expected to be at least several hours. The time between flowline discharges is sufficient for seabed currents to disperse the seawater plume. Near-seabed currents in the Stybarrow field in the order of 0.2 m/s (around 40% of surface current speed) (MetOcean Engineers, 2006).

The volume of residual hydrocarbons in the flowlines and risers is unknown, but is expected to be small as they were flushed to < 30 ppm oil in water during cessation of production. Stybarrow crude is a heavy oil with low lighter fractions such as benzene, toluene, ethylbenzene and xylene, which are slightly soluble in water. Consequently, the dissolved hydrocarbon fraction in the risers and flowlines will be very small compared to the immiscible liquid hydrocarbons and will dilute further upon discharge. Residual hydrocarbons may have pooled in higher sections of the flowlines and risers as they are more buoyant than seawater. Consequently, residual hydrocarbons may be discharged in discrete pulses of hydrocarbon, rather than be dispersed evenly throughout the seawater in the flowlines and risers. The discharged hydrocarbons will rise to the sea surface, with modelling indicating the rise time to the sea surface is approximately 2 hrs (approximately 0.1 m/s) (RPS, 2022a). This rising speed is slower than the ambient current, and the ambient current speeds increase with decreasing water depth (i.e., fastest currents typically near the sea surface) (MetOcean Engineers, 2006). Hydrocarbons will be some distance from the release location by the time they reach the surface; based on measured current speeds, hydrocarbons are likely to surface at least 1 km from the release location.

The release of seawater from the flowlines and risers will result in a decrease in water quality due to the presence of the hydrocarbons. The potential for acute toxic effects is reasonably expected to be limited to the vicinity of the discharge location due to the mixing that will occur and the low portion of soluble hydrocarbon fractions in Stybarrow crude. Receptors that may be impacted include demersal and benthic fauna, such as fishes and infauna. Demersal and benthic fishes are expected to move away from water containing harmful concentrations of toxicants, hence impacts to fishes will be limited to a short-term displacement from the discharge location. Infauna and epifauna exposed to discharges may show toxic effects, however these fauna will also be subject to physical disturbance from removal activities. Infauna and epifauna are expected to recover through natural recruitment over

time. Residual Stybarrow crude reaching the sea surface will not form extensive slicks due to the small volume of oil, the relatively high kinematic viscosity of the hydrocarbon (which resists spreading as a slick) and the dispersion that will occur as the hydrocarbon rises through the water column.

The contents of the umbilicals will be released to the sea near the seabed during recovery of the umbilicals. The water-based hydraulic fluid, methanol, glycol and scale inhibitor have low toxicity and are miscible in seawater. These fluids have low toxicity, with several components listed a PLONOR by the OSPAR Commission. The hydraulic fluid has an OCNS rating of C, indicating aquatic toxic effects are expected at concentrations between 10 and 100 ppm. Dilution to this concentration will occur through mixing within 10's to 100's of metres of the discharge location based on the volume of hydraulic fluid and seabed currents. Impacts from these fluid discharges will be similar in nature to the seawater discharges from the risers, but smaller in scale due to the substantially lower volumes.

The naphtha-based demulsifier is the umbilical discharge with the greatest potential for toxic effects. The hydrocarbons in the demulsifier have a substantially lower density ($< 0.8 \text{ g/cm}^3$) than seawater density (approximately 1.03 g/cm^3), hence it will be buoyant upon release and rise rapidly in the water column. The demulsifier will mix turbulently as it rises, resulting in the formation of progressively smaller droplets, which will rise more slowly. Given the relatively small volumes of demulsifier within the umbilicals, the depth of the release location, local currents and the mixing that will occur as it rises to the sea surface, extensive slicks of demulsifier are unlikely to form. Once on the sea surface, the hydrocarbons in the demulsifier will tend to evaporate rapidly due to their relatively low molecular weight.

As the planned wellhead cutting depth is below the mudline, discharges from cutting the wellheads (e.g., metal and concrete swarf) are expected to be confined predominantly within the well. During the final cut and removal, small amounts will be released below the mudline to sediments localised around the well. If cutting at a shallower depth is required, these discharges may be released to the seabed surface. Wellhead cuttings discharges are low volumes of inert materials and any impact relates to a localised, temporary, and minor change in water quality, with no significant impacts to marine fauna anticipated.

Radiation surveys and physical samples of the flowlines and risers confirm there is little scale within the flowlines and risers, with physical samples of a flowline and riser from areas likely to accumulate scale showing little (H-4 flowline) or no (EH-1 riser) scale (SA Radiation, 2018a). The scale contains NORM, but the concentrations and specific activity of the NORM poses a low risk to the environment (SA Radiation, 2018a, 2018b). Concentrations of mercury in scale were below laboratory limits of reporting and DGVs. The scale detected in the grooves in the H4 flowline section is hard and relatively thin ($< 1 \text{ mm}$) and hence is unlikely to dislodge during flowline recovery. Consequently, most of the scale is expected to be retained within the flowlines and risers and disposed of onshore in accordance with Woodside's waste management arrangements. If scale were to be dislodged during removal and released to the environment, it would be deposited within the sediments at the removal location. Given the small quantities of scale within the flowlines and risers and the relatively low levels of NORM and mercury, the credible impacts to the environment from scale would be minor.

Oil from the H4 flowline is expected to rise to the sea surface from the release location, with the rise time from the seabed to the sea surface approximately 2 hrs (RPS, 2022a). The Stybarrow crude has a low portion of soluble hydrocarbons, so the impacts to water quality during the rise through the water column will be a short-term, localised decrease in water quality. The Stybarrow crude is not amenable to entrainment into fine droplets, so the potential impacts to filter-feeding organisms is low as most filter feeders ingest relatively small particles. Once on the sea surface, the oil will not form extensive slicks as:

- the releases will occur as a series of discrete, relatively small volumes, which will be transported separately by currents
- the low viscosity of the Stybarrow crude resists spreading on the sea surface

Modelling indicates surface slicks above ecological impact thresholds will not occur.

The floating patches of Stybarrow crude will evaporate, weather and decay through natural processes over time (**Figure 7-7**) and are expected to form tar balls. Tar balls range in size but are typically $< 10 \text{ cm}$ in size and generally coin-sized. Tar balls resist weathering and may remain floating for relatively long periods of time (e.g., months). Tar balls may also accumulate relatively dense materials (e.g., sand) which can result in them sinking in the water column. Tar balls are not considered a significant environmental threat except as a coating agent of animals and plant surfaces and may be ingested by marine fauna such as turtles (Kiruri et al., 2013). Accidental ingestion may lead to blockages of the gastro-intestinal tract, which may result in injury or mortality of fauna.

Produced sand may be released from the H4 flowline to the seabed. Any releases of produced sand will be distributed along the seabed between the ends of the H4 flowline (i.e., between the DTM buoy and the H4 well), which is approximately 2 km. The produced sand may be contaminated with residual oil. Woodside will capture as much of the produced sand as practicable, which will reduce the amount of produced sand to be released to the environment. However, it is possible that some produced sand will be released to the environment during recovery of the H4 flowline. The release of produced sand will result in a localised decrease in sediment quality due to hydrocarbon contamination. Seabed currents are insufficient to distribute any discharged produced sand; the sedimentary environment is characterised by silt- and clay-sized particles and disturbance of the seabed from installation activities is still clearly visible in inspection footage.

Residual hydrocarbons on produced sand may result in impacts to benthic habitats and fauna communities. Stybarrow crude is a relatively heavy hydrocarbon, and heavy hydrocarbons typically have less potential to induce toxic effects than relatively low molecular weight hydrocarbons (e.g., BTEX compounds) (Brown et al., 2017). Residual hydrocarbons may be ingested by deposit-feeding infauna and epifauna, such as polychaete worms and holothurians. The presence of hydrocarbons may result in changes to benthic communities; species that tolerate or benefit from the presence of the contaminant may increase in abundance, while particularly sensitive species may become less abundant or absent. For example, the polychaete *Arenicola marina* sampled from a bay polluted by heavy hydrocarbons showed high abundance and no difference in behaviour or hydrocarbon concentration than samples of the same species in unpolluted environments (Gordon Jr. et al., 1978). Gorgon Jr. et al. (1978) also observed higher rates of oil removal in areas with abundant polychaetes and suggested the presence of deposit-feeders may accelerate weathering of oil. Given the nature of the Stybarrow crude and the spatial extent of potential produced sand discharges, changes in benthic communities will be localised to the footprint of produced sand discharges. This area is very small in relation to the overall Stybarrow field, and hence any changes to benthic communities will be on the scale of metres around produced sand deposits.

Polycyclic aromatic hydrocarbons (PAHs) generally pose the greatest risk of bioaccumulation and biomagnification in marine organisms due to their potential for toxicity. Low molecular weight PAHs (e.g., BTEX compounds) are unlikely to be present in produced sand discharges, as these fractions are a small portion of Stybarrow crude and will likely have dissolved in the produced water inside the H4 flowline. This produced water will be discharged to sea and mix with the receiving water during recovery of the H4 flowline. Higher molecular weight PAHs are generally insoluble in water and are lipophilic, resulting in greater potential for bioaccumulation in deposit-feeding organisms. The extent to which hydrocarbons bioaccumulate in deposit-feeders is complex and depends on a range of factors, such as hydrocarbon characteristics, sediment characteristics and the specific responses of the fauna. While the number of samples taken was limited, Cardno (2019) found Gorgon Jr. et al. (1978) showed that the polychaete *Arenicola marina* did not tend to bioaccumulate hydrocarbons, and Jørgensen et al. (2008) showed that polychaetes eliminate some PAHs through enzymatic transformation. Biomagnification in food webs may occur if higher-order predators, such as demersal fishes, consume deposit-feeders that have bioaccumulated PAHs. However, biomagnification is unlikely to occur due to:

- the residual hydrocarbons do not have a high portion of PAHs, hence there is little available for bioaccumulation
- deposit feeders, such as polychaetes, may not bioaccumulate PAHs. There is evidence of polychaetes transforming PAHs into benign compounds through enzymatic action.
- high-order predators, such as demersal fishes, are likely to forage relatively widely. The distribution of any produced sand (and deposit-feeders that may have bioaccumulated PAHs) is localised to the footprint of produced sand discharges. Hence any deposit feeders with increased concentrations of PAHs would only form part of the diet of higher-order predators. Fish have been shown to metabolise PAHs and dietary studies of PAH accumulation in fish have shown generally low uptake efficiency (Meador et al., 1995).

In summary, any produced sand that is not able to be recovered would result in a localised decrease in sediment quality. This may result in changes to epibenthic and infauna assemblages at a local scale but would not result in ecosystem effects. Any impacts to the environmental value of the Continental Slope Demersal Fish Communities KEF would be negligible at worst.

The dissolution of gas hydrates in the H4 flowline will release gas-phase methane. Methane has low solubility in seawater; consequently almost all of the methane released will rise to the sea surface as gas bubbles. Upon reaching the sea surface, the methane will be dispersed in the atmosphere where it will degrade over time. Methane is a potent greenhouse gas. However, the volume of methane released is negligible in the context of Australia's methane releases.

7.7.3.1 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans and approved conservation advice for that identify chemical discharges/pollution as a threat (**Section 9**). No species covered by such plans or conservation advice would credibly be impacted by subsea discharges; hence subsea discharges are not inconsistent with recovery plans or conservation advice.

7.7.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental risk is summarised in **Table 7-22**. This process was completed as outlined in **Section 6.1** 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 7-22: Subsea discharges - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Engineer</i>			
Engineer recovery method for H4 flowline that does not release contents	Reject	Woodside has assessed several potential methods to recover the H4 flowline, including methods that reduce or eliminate the release of the flowline contents (as detailed in Section 3.7.3). Cutting the flowline on the seabed, with the consequent release of the flowline contents, was determined by Woodside to be the only feasible method to recover the flowline.	-
Contain and capture all contaminants including swarf from cutting activities on the seabed	Reject	Containment and recovery of all contaminants and swarf material released during the cutting activities of the flowlines, risers and umbilicals is not considered technically feasible and consists of only small quantities.	-
Contain and recover hydrocarbons from the H4 flowline on the sea surface	Reject	Containment and recovery of floating oil requires the oil to be above a particular thickness on the sea surface for containment and recovery methods to be effective (typically > 10 g/m ²). Modelling indicated that the released oil from the H4 flowline would not reach sufficient thickness for containment and recovery to be effective. Detecting the oil on the sea surface would also be difficult given the volume of oil and dispersion in the water column as the oil rises from the seabed.	-
Cap the ends of flowline, risers and umbilicals during recovery and handling fluids on deck for onshore disposal	Reject	The forces that flowlines, risers and umbilicals will be subjected to during recovery are expected to be sufficient to blow any caps off or rupture the lines, resulting in the release of the contents to the environment. Additionally flushing the chemicals to the vessel and containing the volume of all chemicals on deck for disposal is technically complex and it is considered that the chemicals being	-

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		discharged will rapidly disperse in the marine environment. Recovery of the capped H4 flowline to the surface risks hydrate dissociation near the recovery vessel, posing an intolerable safety risk (Section 3.7.3)	
Subsea containment of H4 oil and sand during recovery.	Accept	Containment of oil and oily sand within the H4 flowline will be attempted during flowline recovery. Woodside is currently determining the detailed engineering required to do this. Woodside expects that containment of the oil and oily sand will be achieved using a device that will capture them upon release.	PS 7.7.1
Administrative			
Woodside chemical selection process (Section 3.10).	Accept	Aids in the process of chemical management that reduces the impact of chemical discharge to the marine environment. Only environmentally acceptable products, as determined by the Woodside chemical selection process (Section 3.10) are used.	PS 7.7.2

7.7.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 7-22**) that when implemented are considered to manage the impacts of subsea discharges to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential impacts of subsea discharges. Additional reasonable control measures were identified in **Table 7-22** 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.

7.7.5 Demonstration of Acceptability

Woodside has investigated alternative methods to remediate the H4 flowline without releasing the contents of the flowline to the environment (**Table 3-23** and **Table 3-24**). Of the six remediation options identified, only two (Option 3 – Establishing Communications Via Hot Taps and Option 4 – Establishing Communications via Rig/Vessel Deployed Coiled Tubing) would credibly contain the contents of the flowline. Both options were not preferred for the reasons outlined in **Table 3-24**. The selected H4 remediation method (Option 1 – Transverse Cut and Recovery) recovers the flowline with a high degree of certainty and is tolerable when considering health, safety and environmental factors. Option 1 – Transverse Cut and Recovery meets the requirements of General Direction 833 to remove the flowline no later than March 2025. Woodside has undertaken hydrocarbon spill modelling to inform the environmental impact assessment of the worst-case Stybarrow crude release scenario from the H4 flowline. This modelling was done by subject matter experts and indicated that environmental impacts from the release would be localised. Given there is no feasible alternative to remediate the H4 flowline without releasing the contents, and the short-term, localised impacts, the planned release of the H4 flowline contents is acceptable.

Given the adopted controls, subsea discharges will not result in potential impacts greater than temporary and minor reduction in water quality. Further opportunities to reduce the impacts have been investigated in **Table 7-22**.

The adopted controls are considered good oil-field practice/industry best practice. During consultation NTGAC asked words to the effect that if any oil will come out when equipment was removed. Woodside has provided

NTGAC detailed information on the planned release from the H4 flowline and no further queries have been raised. Woodside will continue to engage with NTGAC as part of ongoing engagement and will consider any further feedback received, including in relation to the H4 flowline, as per **Sections 11.9** and **11.10.2.1**. Woodside has considered information contained in recovery plans and threat abatement plans (**Section 9**). The environmental impacts meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social and equitable considerations.
- Precautionary principle: The subsea discharges aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The subsea discharges aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The subsea discharges aspect will not impact upon biodiversity or ecological integrity in the long-term.

Woodside considers the impact to be managed to an acceptable level.

7.7.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 7-23: Environmental performance outcomes, performance standards and measurement criteria for subsea discharges

Environmental Performance Outcome	Controls	Performance Standard	Measurement Criteria
EPO 7 Impacts from operational discharges associated with Stybarrow planned subsea discharges limited to localised, temporary changes in water and sediment quality in the vicinity of the discharge location.	C 7.1 Engineered solution feasibility investigated to attempt recovery of hydrocarbons and produced sand during cut and recovery of blocked H4 flowline.	PS 7.1 Engineered solution in place (where deemed feasible) to attempt to recover hydrocarbons and produced sand from H4 flowline during cutting and recovery of the flowline.	MC 7.1.1 Records demonstrate volumes of hydrocarbon and produced sand captured during cut and recover activity
	C 7.2 Fluids and additives planned to be used and intended or likely to be discharged to the marine environment will have an environmental assessment completed before use.	PS 7.2 All chemicals intended or likely to be discharged to the marine environment reduced to ALARP using the chemical assessment process (refer to Section 3.10).	MC 7.2.1 Records demonstrate chemical selection, assessment and approval process for selected chemicals is followed. Records show that decommissioning environmental surveys (EPO 6) include an assessment of water and sediment quality for contamination associated with planned subsea discharges.

7.8 Waste Generation

7.8.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Waste Generation	Waste (hazardous and non-hazardous) generated during vessel activities	Increase waste to landfill. Additional usage of onshore waste reception facilities. Availability of materials from recycling	10	N/A	-	Type A Low Order Impact	Tolerable
	Recovered subsea infrastructure		30	N/A	-	Type A Low Order Impact	Tolerable

7.8.2 Source of Hazard

7.8.2.1 Project Vessels

Project vessels generate a variety of solid wastes, including domestic and industrial wastes. These include aluminium cans, bottles, paper and cardboard, scrap steel, chemical containers, batteries, and medical wastes.

Waste is segregated on-board the project vessels and stored in designated skips and waste containers. Wastes are segregated into the categories of:

- non-hazardous waste (or general waste)
- hazardous waste
- recyclables (further segregation is conducted in line with practices at existing Woodside operations in the region).

General non-hazardous waste includes domestic and galley waste, and recyclables such as scrap materials, packaging, wood and paper and empty containers. Volumes of non-hazardous waste generated on vessels are generally minor.

Hazardous wastes are defined as those that are or contain ingredients harmful to health or the environment. Hazardous wastes likely to be generated on-board the project vessels include oil-contaminated materials (such as sorbents, filters, and rags), chemical containers and batteries. The volumes of generated hazardous wastes are relatively minor.

7.8.2.2 Blocked H4 Flowline Contents

The blocked H4 flowline will be removed by cutting it into sections on the seabed, which will then be recovered for disposal. This process will release the sand, oil, produced water and gas hydrates (**Table 3-16**) in the blocked H4 flowline to the environment. Woodside will attempt to recover the oil and sand released during cutting of the blocked H4 flowline.

7.8.2.3 Recovered Subsea Infrastructure

Recovered subsea infrastructure will be removed from the title area and disposed of in accordance with the waste management plan developed during the contracting phase. The waste management plan will address the waste management hierarchy and disposal methods and appropriate transfer of ownership of recovered equipment. These plans will include auditing and compliance checks to ensure the requirements of the waste management hierarchy are met. Refer to the subsea infrastructure waste management section of the implementation strategy for further information (**Section 11.5**).

Recovered Stybarrow subsea infrastructure will be managed through the following, in accordance with the waste management hierarchy shown in **Figure 7-8**:

- Reduce (note, there are no opportunities to reduce the Stybarrow subsea infrastructure waste)
- Reuse
- Recycle
- Waste to energy
- Disposal to landfill
- Entombment.

This hierarchy ranks disposal options from the most preferred (re-use and repurposing) to the least preferred (entombment).

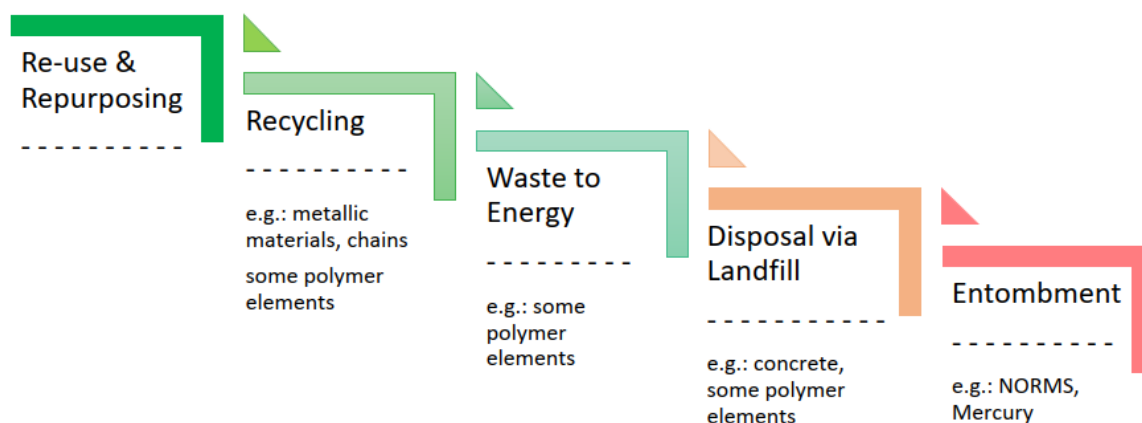


Figure 7-8: Stybarrow equipment removal waste management hierarchy

Reuse of the subsea infrastructure is the preferred waste management approach. Reusing the subsea infrastructure often requires some degree of refurbishment to ensure that it can be reused, however mitigates the subsea infrastructure going to recycling or landfill.

Recycling of the subsea infrastructure is the preferred waste management approach when reuse is not feasible (e.g., the infrastructure is damaged or the cost to reuse / refurbish is excessive). Recycling of subsea infrastructure may involve stripping the subsea infrastructure to separate the individual materials. The material can then be segregated and sent to a recycling facility.

Treatment of the subsea infrastructure potentially involves decontamination (e.g., residual contaminants deposited during production) within the infrastructure at an onshore location. If treatment is successful, then the subsea infrastructure waste can be reused or recycled. Investigations of potential contamination within the Stybarrow equipment indicate concentrations of potential contaminants from production (e.g., NORMs and mercury) are low and required treatment (if any) will not be extensive. Further information on onshore decontamination is provided in **Section 11.5**.

In instances where it is not feasible to separate the material within subsea infrastructure or the material is contaminated and cannot be treated, then the subsea infrastructure is sent to landfill.

The final waste management strategy for each piece of recovered subsea infrastructure is defined and will be optimised based on the best outcome aligned with the waste management hierarchy. The waste management hierarchy preferences have been provided to the waste management contractors during the tendering process.

As described in **Section 3.10.1**, Woodside has engaged suitably qualified experienced contractors for disposal of the Stybarrow infrastructure.

A summary of the equipment in WA-32-L is provided in **Table 7-24** below, along with the proposed fate for the components of each equipment group. The approximate weight of the equipment is 11,977 t in total, of which 10,030 t and 1,947 t are metal and plastic respectively. Woodside's target is to recycle 90% by weight or more of the equipment recovered from WA-32-L. Further information on recycling and disposal is provided in **Section 11.5**.

Table 7-24: Summary of waste categories and end fates

Equipment Group	Approximate Weight (t)	Composition	Proposed Fate
DTM	739	100% metal	Recycle metals
DTM chains/wire mooring lines and support buoys	1,521	100% metal	Recycle metals
Structures (manifolds, wellheads, trees etc.)	888	>99% metals	Recycle metals, Eskdale-1 (8 t) wellhead proposed to be abandoned in situ.
Flexibles	6,564	~72% metal ~28% plastic	Recycle metals and plastics (where practicable). Most plastics in flexibles is expected to be recyclable. Some plastics (e.g., tapes) will be consumed during deconstruction and not suitable for recycling.
Umbilical and flying leads	258	~63% metal ~37% plastic	Recycle metals and plastics (where practicable). Most plastics in flexibles is expected to be recyclable. Some plastics (e.g., tapes) will be consumed during deconstruction and not suitable for recycling.
Suction piles (riser bases and water injection manifold foundation)	1,908	>99% metal	Abandon in situ
Mooring anchors	99	>99% metal	Abandon in situ
Total	11,977		

As part of the contracting phase for disposal of the subsea infrastructure Woodside undertook a contractor evaluation and selection process which included:

- The Onshore Disposal/Recycling Sub-Contract package was issued to a wide variety of bidders including varying tier of company, geographic location and core business.
- This was done to establish the industry capabilities in order to develop a functional execution plan.
- The Evaluation Criteria included:
 - Offshore Testing

- Logistics Capability
- Provision of Local Yard & Facilities
- Onshore Cleaning (Hazardous Materials)
- Hazardous Material Disposal
- Onshore Deconstruction
- Mixed Material Processing
- Metallic Recycling
- Plastic Recycling
- Manpower & Equipment

The following preferences were made during the waste management contractor tender evaluation:

- Selection of preferred onshore discharge points and dismantling and clean-up sites is:
 - Primarily driven by the proximity of the onshore discharge points / port facilities to the offshore field.
 - Additional evaluation criteria included port facilities and capabilities, port services availability, etc.
 - Preference for closest port facility to minimise vessel transit times between field and port.
 - Anticipate more than 20 vessel trips between field and port for Stybarrow removal scope.
 - Port locations considered included Port of Ashburton, Onslow, Beadon Creek and Dampier.
 - Port of Ashburton has been selected as the preferred location.
 - Selection of dismantling and clean-up sites included in item above with preference for onshore locations that are in close proximity to the port to minimise overland transportation and logistics requirements.
- Woodside is targeting a 90% landfill avoidance by weight for the Stybarrow Decommissioning campaign. There is a financial incentive tied into the agreement for the contractor to drive reduction in waste generation, minimising landfill with outcomes up the disposal hierarchy.
- Preference for waste management contractors who are able to follow the waste management hierarchy philosophy, to reduce waste disposal to landfill.

Woodside will establish roles, the Onshore Processing and Recycling Yards Site Supervisors, that will conduct onsite surveying/verification of all retrieved infrastructure. The roles are responsible for obtaining key chain-of-custody documentation from the contractor regarding the end-state of wastes generated during Stybarrow Decommissioning. The Woodside Decommissioning Logistics Lead conduct Waste Environmental Audits on contractor and subcontractor sites, prior to receiving retrieved infrastructure and during operations. This audit will be undertaken to confirm that the contractor has the facilities and systems to be able to manage Stybarrow Decommissioning wastes in an environmentally responsible manner and in accordance with the Recycling and Disposal Management Plan.

NORM may be present on the recovered production infrastructure. Once on-board the vessel, this equipment will be checked for NORM and, if present, segregated from other waste as per contractor NORM Management Plan. All NORM material will be transported to shore for disposal at an approved facility in accordance with legislative requirements, including the Australian Radiation Protection and Nuclear Safety Agency requirements.

Woodside is committed to clear stewardship and assurance measures to verify implementation of the waste management plan(s) under the agreement with the contractor. Woodside does not transfer title of the infrastructure until final disposal after processing of the contractor has been completed. Woodside will maintain a register of final disposal details to maintain stewardship especially regarding hazardous wastes.

Waste generated from decommissioning of equipment could contribute to the increasing pressure on local landfills if not managed appropriately through consideration of the waste hierarchy and alternative means of disposing to landfill. There is also the potential for recovered infrastructure to be incorrectly classified and disposed of inappropriately leading to contamination of waste streams.

Woodside is committed to re-using, repurposing and recycling as much of the decommissioning infrastructure as practicable. Any wastes generated during the petroleum activities, including recovery of well infrastructure, will be

disposed in accordance with a Waste Management Plan. The Waste Management Plan will apply the following waste management hierarchy to minimise the amount of waste entering landfill:

- Reuse
- Repurpose
- Recycle
- Landfill

All waste streams will be managed in accordance with applicable legislative requirements, and/or in accordance with international guidance where applicable, including:

- Environmental Protection (Controlled Waste) Regulations 2004 (WA)
- Navigation Act 1912 and the Protection of the Sea (Prevention of Pollution from Ships) Act 1983 and associated Marine Order 95 - Marine Pollution Prevention–Garbage
- *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (Cth) which implements the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- MARPOL: International Convention for the Prevention of Pollution from Ships
- International Finance Corporation: EHS Guidelines: Environmental Waste Management.

7.8.3 Environmental Impact Assessment

7.8.3.1 Project Vessels

Waste generated during the petroleum activity will be transported to and managed appropriately by third parties. Environmental impacts associated with onshore disposal relate to the small incremental increase in waste volumes received at the onshore licensed waste recycling and disposal sites. The environmental impacts associated with waste disposal onshore are anticipated to be minor, based on the minor quantities involved and recycling of some materials.

Hazardous waste materials will be classified and managed in accordance with the waste management procedures. This will include ensuring hazardous materials are disposed of by suitable waste management facilities.

7.8.3.2 Recovered Subsea Equipment

Environmental impacts associated with waste disposal will depend on the classification of the waste in accordance with the waste management hierarchy (**Figure 7-8**):

- Reuse of subsea infrastructure has no or very minor environmental impact.
- Recycling of subsea infrastructure requires energy use associated with a recycling process (e.g., use of heat etc). The use of energy has no or very minor environmental impact.
- The disposal of subsea infrastructure to landfill contributes to the overall volume of waste going to landfill each year.

Whilst the volumes of waste material associated with the subsea infrastructure are relatively minor compared to the volume of waste going to landfill in Australia each year (estimated at 20 million tonnes each year (Australian Bureau of Statistics, 2020)), the exploration of reducing waste to landfill through recycling and other waste management practices is part of the *National Waste Policy Action Plan 2019* (Commonwealth of Australia, 2019). In addition, Woodside utilise an ALARP approach to waste impact reduction and follow the waste management hierarchy.

Whilst Woodside's waste management philosophy follows the waste management hierarchy, in some instances it is not always feasible to reuse and recycle subsea infrastructure waste. If some subsea infrastructure waste goes to landfill the environmental impacts are anticipated to be minor, based on the relatively small quantities involved.

Hazardous waste materials will be classified and managed in accordance with the waste management procedures. This will include ensuring hazardous materials are disposed at suitably licensed waste management facilities. Woodside will provide appropriate assurance over final disposal of recovered equipment aligned with **Section 7.8**.

The measured concentrations of potential contaminants deposited during production, such as NORM and mercury, are low.

The disposal of recovered subsea equipment will result in indirect impacts. Recovered steel and much of the plastic is expected to be recycled. Recycling may indirectly reduce demand for new steel and plastic, resulting in less consumption of energy and metals used to create steel. Material that cannot be recycled will be disposed of in accordance with the waste management arrangements described in **Section 11.5**. Material that cannot be recycled will be classified and disposed of in accordance with relevant requirements (e.g., Western Australia Environmental Protection (Controlled Waste) Regulations 2004), with the end fate determined by the classification. Most non-recyclable wastes are expected to be disposed of in either Class I (inert waste) or Class V (intractable waste) landfill facilities²³. Monitoring and measurements to date indicate very low levels of mercury of NORM contamination, hence little or no equipment is expected to be classified as intractable waste. Landfill facilities are limited in volume, and disposal of non-recyclable material by landfill will reduce the capacity of existing landfill facilities. Given the nature of the material that may be disposed of as landfill and the management of landfill facilities, indirect impacts such as groundwater contamination will not credibly occur. Transportation of recovered materials for recycling or disposal will have indirect impacts from the logistics chain, such as greenhouse gas emissions from transportation. Indirect impacts from management of recovered subsea equipment are a measurable but limited impact to the environment, hence the severity and severity factor are considered 2 and 30 respectively (**Table 6-3**).

7.8.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 7-25**. This process was completed as outlined in **Section 6.2** 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 7-25: Waste generation - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Administrative			
Marine Order 95 – Marine Pollution Prevention—Garbage (as appropriate to vessel class), prescribes matters necessary to give effect to Annex V of MARPOL, which prohibits the discharge of all garbage into the sea, except as provided otherwise.	Accept	Legislative requirements to be followed reduces the potential for contamination between hazardous and non-hazardous wastes by requiring waste segregation on the vessels in accordance with a waste management plan. The control is based on a legislative requirement and therefore must be adopted.	PS 8.1
Disposal of any hazardous waste associated with the Stybarrow subsea infrastructure will comply with relevant State and Commonwealth legislation: <ul style="list-style-type: none"> Commonwealth Hazardous Waste (Regulation of 	Accept	Legislative requirements to be followed reduce the likelihood of incorrect disposal of infrastructure. The control is based on a legislative requirement and therefore must be adopted.	PS 8.2

²³ Based on Landfill Waste Classification and Waste Definitions 1996 (as amended 2019) (Department of Water and Environmental Regulation, 2019), which applies to Western Australian landfill facilities.

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<p>Exports and Imports) Act 1989</p> <ul style="list-style-type: none"> ▪ WA Environmental Protection (Controlled Waste) Regulations 2004. ▪ Basel Convention ▪ Minamata Convention 			
<p>Waste will be managed in accordance with the Recycling and Disposal Management Plan (Section 11.5). Preference for waste management follows the waste management hierarchy:</p> <ul style="list-style-type: none"> ▪ Elimination and reduction ▪ Re-use ▪ Recycling ▪ Treatment <p>The waste management plan includes details on:</p> <ul style="list-style-type: none"> ▪ Storage of waste ▪ Transport and disposal of waste ▪ Waste legislation and standards ▪ Waste monitoring and reporting. 	Accept	<p>The development of the waste management plan will aim to reduce the volume of waste to landfill.</p> <p>Minor cost involved in waste management practices. Environmental benefit outweighs cost sacrifice.</p>	PS 8.3
<p>Waste management contractor evaluation and selection will include a preference for:</p> <ul style="list-style-type: none"> ▪ Contractors who are able to follow the waste management hierarchy philosophy, to reduce waste disposal to landfill. ▪ Woodside will audit and verify performance of waste management contractor. 	Accept	<p>During the contractor evaluation Woodside will assess the contractor's ability to follow the waste management hierarchy. By including in the selection process a preference for:</p> <p>Contractors who are able to follow the waste management hierarchy philosophy, to reduce waste disposal to landfill.</p> <p>It is anticipated that waste to landfill can be reduced to ALARP levels.</p> <p>Minor cost involved in waste management practices and contract evaluation. Environmental benefit outweighs cost sacrifice.</p>	PS 8.4.1 PS 8.4.2

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<p>Contractor NORM Management Plan is in place on the project vessels and adhere to. The plan includes:</p> <ul style="list-style-type: none"> During the equipment retrieval campaign, a Radiation Inspector will be on-board the vessel to inspect equipment for NORM. If NORM are identified, the affected equipment will be stored in a dedicated, demarcated area on the vessel and segregated from other equipment. 	Accept	<p>NORM waste and equipment will be segregated in accordance with an offshore NORM Management Plan. Will isolate the NORM waste and eliminate cross contamination.</p> <p>Minor cost involved in segregating the NORM waste. Environmental benefit outweighs cost sacrifice.</p>	PS 8.5

7.8.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 7-25**) that when implemented are considered to manage the impacts of routine vessel discharges from the project vessels to ALARP. Woodside considers the control measures described above are appropriate to reduce the potential impacts of waste generation. No additional controls were identified. The impacts are therefore considered reduced to ALARP.

7.8.5 Demonstration of Acceptability

Given the adopted controls, waste generation will not result in potential impacts greater than minor due to the materials handled onshore for disposal or recycling.

Article 9 of the Minamata Convention requires parties to implement measures to control releases of mercury, with measures to include one or more of the measures described in **Table 7-26**.

Table 7-26: Demonstration of alignment with relevant articles of the Minamata Convention

Measures in Article 9(5) of the Minamata Convention	Justification for Implementation or Rejection of the Measure
Release limit values to control and, where feasible, reduce releases from relevant sources	Sampling in the Stybarrow field did not detect mercury contamination. If mercury contamination is present, it would occur hard scale within flowlines etc. Sampling of flowlines found very small quantities of hard scale in the Stybarrow equipment sampled (Section 3.3). As such, Woodside concludes there are no relevant sources of mercury (as determined by the Minamata Convention).
The use of best available techniques and best environmental practices to control releases from relevant sources	<p>Woodside has reviewed the Guidance on Best Available Techniques and Best Environmental Practices - Minamata Convention on Mercury (United Nations Environment Program, 2019). The best available techniques described in this document only apply to facilities listed in Annex D of the Minamata Convention, which excludes offshore oil and gas production facilities; none of the best available techniques are applicable to the waste generation aspect of the petroleum activity.</p> <p>Using best available techniques is intended to prevent or limit the release of mercury to the environment. The nature and scale of mercury within the Stybarrow equipment will prevent or limit the release of mercury to the</p>

Measures in Article 9(5) of the Minamata Convention	Justification for Implementation or Rejection of the Measure
	environment. Hence, the intent of using best available techniques has been maintained.
A multi-pollutant control strategy that would deliver co-benefits for control of mercury releases	Woodside will implement a NORM and Mercury Management Plan which will manage both contaminants. This includes management of mercury and NORM onshore, where mercury and NORM collected during decontamination will be stored and managed.
Alternative measures to reduce releases from relevant sources.	No other opportunities to reduce releases of mercury were identified.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1972 (Basel Convention) limits the international movement of hazardous waste. Equipment contaminated with NORM and mercury may meet the criteria for hazardous waste defined by the Basel Convention, depending on the level of contamination. All equipment that may be exported for re-use or recycling will be confirmed to not constitute hazardous waste (as defined by the Basel Convention).

Waste generation cannot be eliminated. The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding waste generation have been raised by relevant stakeholders. The environmental impact meets the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations. Woodside’s waste management hierarchy for decommissioning prefers re-use, re-purposing and recycling over disposal with no subsequent beneficial use.
- Precautionary principle: The waste generation aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The waste generation aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The waste generation aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.8.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 7-27: Environmental performance outcomes, performance standards and measurement criteria for physical presence - interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 8 Waste generated is segregated and disposed of in accordance with relevant legislation	C 8.1 Marine Order 95 - Marine Pollution Prevention–Garbage (as appropriate to vessel class) prescribes matters necessary to give effect to Annex V of MARPOL, which prohibits the discharge of all garbage into the sea, except as provided otherwise.	PS 8.1 Project vessels compliant with Marine Order 95.	MC 8.1.1 Records demonstrate project vessels are compliant with Marine Order 95.
	C 8.2 Disposal of any hazardous waste associated with the Stybarrow subsea infrastructure will comply with relevant State and Commonwealth legislation: <ul style="list-style-type: none"> ▪ Commonwealth Hazardous Waste (Regulation of Exports and Imports) Act 1989 ▪ WA Environmental Protection (Controlled Waste) Regulations 2004. ▪ Basel Convention ▪ Minamata Convention 	PS 8.2 Disposal of any hazardous waste associated with the Stybarrow subsea infrastructure is compliant with the Commonwealth <i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i> , the WA Environmental Protection (Controlled Waste) Regulations 2004, the Basel Convention, and Minamata Convention.	MC 8.2.1 Records demonstrate disposal of hazardous waste associated with the Stybarrow subsea infrastructure was compliant with relevant International Conventions, Commonwealth and State legislation.
	C 8.3 Waste will be managed in accordance with the Recycling and Disposal Management Plan (Section 11.5). Preference for waste management follows the waste management hierarchy: <ul style="list-style-type: none"> ▪ Elimination and reduction ▪ Re-use 	PS 8.3 Decommissioning waste generated from infrastructure removal is managed in accordance with the Recycling and Disposal Management Plan described in Section 11.5 ., including: <ul style="list-style-type: none"> ▪ 90% by weight recycling of materials ▪ decontamination of waste (if required) prior to recycling or disposal 	MC 8.3.1 Records demonstrate compliance against the Recycling and Disposal Management Plan including: <ul style="list-style-type: none"> ▪ Storage of waste ▪ Transport and disposal of waste ▪ Waste legislation and standards ▪ Waste monitoring and reporting

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<ul style="list-style-type: none"> ▪ Recycling ▪ Treatment <p>The waste management plan includes details on:</p> <ul style="list-style-type: none"> ▪ Storage of waste ▪ Transport and disposal of waste ▪ Waste legislation and standards ▪ Waste monitoring and reporting. 	<ul style="list-style-type: none"> ▪ storage, transportation, and disposal of equipment in accordance with Environmental Protection (Controlled Waste) Regulations 	<p>And that wastes have been assessed for:</p> <ul style="list-style-type: none"> ▪ Elimination and reduction ▪ Re-use ▪ Recycling ▪ Treatment.
	<p>C 8.4</p> <p>Waste management contractor evaluation and selection will include a preference for contractors who are able to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.</p> <p>Woodside will audit and verify performance of waste management contractor against waste management plan.</p>	<p>PS 8.4.1</p> <p>Waste management contractor selected based on an assessed capability to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.</p>	<p>MC 8.4.1.1</p> <p>Records show that waste management contractor evaluation and selection was based on an assessed capability to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.</p>
	<p>C 8.5</p> <p>Contractor NORM Management Plan is in place on the project vessels and adhere to. The plan includes:</p> <ul style="list-style-type: none"> ▪ During the equipment retrieval campaign, a Radiation Inspector will be on-board the vessel to inspect equipment for NORM. ▪ If NORM are identified, the affected equipment will be stored in a dedicated, 	<p>PS 8.5</p> <p>Decommissioning waste generated from infrastructure removal is managed in accordance with contractor NORM Management Plan.</p>	<p>MC 8.5.1</p> <p>Records show that Radiation Inspector is onboard the vessel to inspect equipment for NORM and NORM identified equipment is stored in a dedicated, demarcated area on the vessel and segregated from other equipment.</p>

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	demarcated area on the vessel and segregated from other equipment.		

7.9 Hydrocarbon Response Operations

7.9.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Hydrocarbon Response Operations	Hazards associated with implementation of response	Impacts associated with the following: <ul style="list-style-type: none"> ▪ Vessel movements / physical presence ▪ Light emissions ▪ Noise emissions ▪ Atmospheric emissions ▪ Disturbance to natural habitat ▪ Routine vessel discharges 	10	N/A	-	Type A Low Order Impact	Tolerable

7.9.2 Source of Hazard

The response strategies appropriate to a hydrocarbon response are detailed in the petroleum activity OPEP (BHPB-00SC-N000-0004) (**Appendix D**) and include:

- operational monitoring
- oiled wildlife response
- scientific monitoring.

Response strategies are intended to reduce the environmental consequence of a hydrocarbon spill. However, hydrocarbon response strategies may result in environmental impacts themselves (for example, those requiring vessel use). In addition, lack of planned and coordinated response activities or guidance can result in inadequate response implementation causing further environmental impact.

Environmental impacts associated with vessel use have been described within this EP in the following sections:

- **Section 7.1** (physical presence)
- **Section 7.2** (light emissions)
- **Section 7.3** (noise emissions)
- **Section 7.4** (atmospheric emissions)
- **Section 7.5** (routine vessel discharges).

Specific impacts relating to response operations are described further below.

7.9.3 Environmental Impact Assessment

Spill response activities may take place in nearshore and on shorelines, although modelling indicates shoreline accumulation of hydrocarbons above impact thresholds will not occur. The receptors considered most sensitive to

vessel activities near shorelines are seabirds and marine turtles. The Ningaloo coast has several turtle nesting beaches. During the nesting period (November to January) and hatching periods (December to March) turtle sensitivity to light will be greater.

Given the scale of the response required any impacts are expected to be temporary and minor. Impacts will also be considered in the operational NEBA process during the response.

7.9.4 Demonstration of As Low As Reasonably Practicable

The NEBA process is the primary tool used during spill response to evaluate response strategies with the goal of selecting strategies that result in the least net impact to key environmental sensitivities. The NEBA process will identify and compare net environmental benefits of alternative spill response options during the hydrocarbon response. The NEBA will effectively determine whether an environmental benefit will be achieved through implementing a response strategy compared to undertaking no response. This will ensure that at the hydrocarbon response operations reduce additional environmental impacts to ALARP.

The ALARP assessment process for oil spill strategies is presented in **Section 6.2.2**. An ALARP assessment for resourcing for each spill response strategy is presented within **Appendix E**.

7.9.5 Demonstration of Acceptability

In the event of a hydrocarbon spill, response operations cannot be eliminated. No concerns or objections regarding hydrocarbon response operations have been raised by relevant stakeholders. The environmental impact meets the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The hydrocarbon response operations aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect. Hydrocarbon response operations preparations was informed by industry-standard modelling, which includes the worst-case credible spill scenario, incorporates inherent uncertainty and is consistent with the precautionary principle.
- Inter-generational principle: The hydrocarbon response operations aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The hydrocarbon response operations aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level. Woodside acknowledges that uncertainty on cultural values may remain; however, the Ongoing Program on Traditional Custodian Feedback (EPO 14 and C1.10) has been developed to enable Woodside to manage potential uncertainty on the impacts and risks to cultural values which may be identified at any time during Woodside's activities via ongoing dialogue with Traditional Custodians.

7.9.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

EPOs, EPSs, and MCs for the effectiveness of the response strategy implementation are detailed within the petroleum activity Oil Pollution Emergency Plan (OPEP) (BHPB-00SC-N000-0004) (**Appendix D**).

8 Environmental Risk Assessment and Evaluation: Unplanned Events

The purpose of this section is to address the requirements of Regulations 13(5) and 13(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 ALARP and an acceptable level. This section presents the environmental impacts and risks associated with unplanned events of the petroleum activity.

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

Table 8-1: Summary of the environmental risk analysis for unplanned events

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
Hydrocarbon Release – Marine Diesel – Section 8.2																
Surface release of MDO from a project vessel as a result of an external impact (vessel collision) which ruptures an MDO tank.	x	x	x	x		x		x		x	x	x	100	0.1	10	Tolerable
Release of MDO during a bunkering incident	x	x	x	x		x							10	0.3	3	Tolerable
Hydrocarbon Release – Loss of Well Containment – Section 8.3																
Subsea release of hydrocarbons from shut-in production wells						x							1	0.03	0.3	Tolerable
Marine Fauna Interaction – Section 8.4																
Accidental collision between project vessel and marine fauna.	x	x											30	0.1	3	Tolerable
Introduced Marine Species – Section 8.5																
Movement of project vessels and immersible equipment from known high invasive marine species risk areas					x					x		x	100	0.1	10	Tolerable
Minor Spills of Chemicals and Hydraulic Fluid – Section 8.6																
Minor spills and leaks of chemicals and hydrocarbons on the vessel deck reaching the marine environment and from subsea equipment (such as ROVs).	x	x	x	x		x							10	0.3	3	Tolerable
Loss of Solid Hazardous and Non-hazardous Wastes (including Dropped Objects) – Section 8.7																
Loss of waste (hazardous and non-hazardous) generated during vessel activities.	x	x	x	x	x	x			x				10	0.3	3	Tolerable
Loss of recovered subsea infrastructure.					x				x				10	0.3	3	Tolerable

8.1 Quantitative Spill Risk Assessment Methodology

The worst-case credible release scenario for this EP is defined as a vessel collision resulting in the release of marine diesel into the marine environment and is presented in **Section 8.2**.

Quantitative hydrocarbon spill modelling was performed by RPS (2022) on the worst-case credible release scenario using a three-dimensional (3D) hydrocarbon spill trajectory and weathering model, SIMAP (Spill Impact Mapping and Analysis Program). SIMAP is designed to simulate the transport, spreading and weathering of specific hydrocarbon types under the influence of changing meteorological and oceanographic forces.

The stochastic model within SIMAP performs a large number of simulations for a given release site, randomly varying the release time for each simulation. The model uses the spill time to select samples of current and wind data from a long time series of wind and current data. Hence, the transport and weathering of each slick will be subject to a different sample of wind and current conditions. More simulations will tend to use the most commonly occurring conditions, while conditions that are more unusual will be represented less frequently.

Results of the replicate simulations are statistically analysed and mapped to define contours of percentage probability of contact at identified thresholds around the hydrocarbon release point. The stochastic approach captures a wide range of potential weathering outcomes under varying environmental conditions, which is reflected in the aggregated spatial outcomes showing the areas that might be affected by sea surface and subsurface hydrocarbons.

The modelling outcomes are presented in **Section 8.2** and provide a conservative understanding of where a large-scale marine diesel release could travel in any metocean condition. The modelling does not consider any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill. Therefore, the modelling results represent the maximum extent that may be affected.

A 1,000 m³ marine diesel release was modelled at the DTM (deemed to be a representative location for vessel-based activities considered in this EP) for summer, winter and transitional seasons and is considered appropriate, although conservative, for informing the approximate spatial extent of potential impacts from a worst-case credible release from a vessel collision event during the petroleum activity. During an unplanned field management scope (**Section 3.8**) a hydrocarbon release could occur closer to the coastline (at the State / Commonwealth waters boundary) as a result of vessel collision. However, the project vessel used for field management has a single fuel tank volume of 250 m³ (**Table 3-27**), substantially lower than the project vessel used for infrastructure removal activities. Therefore, the release from of 1,000 m³ of MDO at the DTM is considered the worst-case MDO release for this EP.

Environmental receptors selected for the modelling are chosen based on protected area status, sensitivity of habitats to impact, societal values. **Appendix G** presents the locations of the environmental receptors used in the modelling. **Table 8-2** presents the parameters and justification used in the modelling.

Table 8-2: Summary of parameters for marine diesel spill modelling

Parameter	Description
Number of spill simulations	100 for each season (summer, transitional and winter) – 300 simulations in total
Hydrocarbon type	Marine diesel oil
Release type	Surface release
Total spill volume	1,000 m ³
Spill volume justification	Largest single tank for any project vessel (refer to Section 3.9)
Release duration	Instantaneous

8.1.1 Hydrocarbon Properties

The worst-case credible release scenario for this EP is a vessel collision resulting in the release of MDO into the marine environment, as presented in **Section 8.2**. MDO is categorised as a Group II oil (light-persistent) based on categorisation and classification derived from AMSA (2015) guidelines. It has a density of 829.1 kg/m³ (API of 37.6) and a low pour point of -14 °C. The low viscosity (4 cP) indicates this oil will spread quickly when released and will form a thin to low thickness film on the sea surface, increasing the rate of evaporation. Generally, about 6.0% of the MDO mass should evaporate within the first 12 hours (BP <180 °C).

About 40.6% of the MDO mass should evaporate within the first 24 hours (180°C < BP <265°C). After several days 95% of the MDO mass should evaporate (265°C < BP <380°C). Around 5% (by mass) of MDO will not evaporate at atmospheric temperatures and will persist in the environment.

Some heavy components contained in MDO have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (in other words, >12 knots) and breaking waves, but can re-float to the surface if these energies abate (RPS, 2022b).

The MDO properties are summarised in **Table 8-3**.

Table 8-3: Marine diesel characteristics

Hydrocarbon type	Initial Density (g/m ³)	Viscosity (cP)	Component Boiling Point (°C)	% Volatiles < 180 °C	% Semi-volatiles 180-265 °C	% Low Volatility (265-380 °C)	% Residual >380 °C	% Aromatic of whole oil <280 °C
				Non-persistent			Persistent	
Marine diesel	0.829 @ 25 °C	4.0 @ 25 °C	% of total	6.0	34.6	54.4	5.0	3.0
			% of aromatics	1.8	1.0	0.2	-	-

8.1.2 Hydrocarbon Exposure Values

As described in **Section 4.1**, the spatial extent of the EMBA has been derived using stochastic hydrocarbon fate and transport modelling of the worst-case credible release scenario. To present this large amount of simulated data in a meaningful way and to inform the impact and risk assessment and environmental management actions, appropriate hydrocarbon exposure values were applied to each of the hydrocarbon components (refer **Table 8-4**). *Bulletin #1 Oil Spill Modelling* (NOPSEMA, 2019) recommends selecting hydrocarbon exposure values that broadly reflect the range of consequences that could occur at various concentrations.

The EMBA presented in **Figure 4-1** was defined using exposure thresholds values presented in **Table 8-4**.

As the weathering of different components of hydrocarbons (surface, entrained and dissolved) differs due to the influence of the metocean conditions, the EMBA combines the potential spatial extent of the different hydrocarbon components. The EMBA also includes areas that are predicted to experience shoreline contact with hydrocarbons above threshold concentrations.

Hydrocarbon contact below the defined thresholds may occur outside the EMBA; however, the effects of these low exposure values will be limited to temporary exceedance of water quality triggers.

Table 8-5 presents justification for the exposure thresholds used to define the EMBA. The table also details how different exposure threshold values are relevant to the impact assessment for an MDO release (**Section 8.2**).

Table 8-4: Summary of exposure thresholds used to define the EMBA

Hydrocarbon Component	Units	EMBA Exposure Value
Surface hydrocarbons	g/m ²	1
Shoreline hydrocarbons	g/m ²	10
Entrained hydrocarbons	ppb	100
Dissolved aromatic hydrocarbons	ppb	50

Table 8-5: Descriptions of hydrocarbon exposure thresholds

Threshold Exposure Value	Description
Surface Hydrocarbons	
1 g/m ²	Low: It is recognised that 1 g/m ² represents the practical limit of observing hydrocarbon sheens in the marine environment. This exposure value is below the levels that would cause ecological impacts but is considered relevant to approximate the area of effect to socio-economic receptors. This exposure value has been used to define the spatial extent of the EMBA from surface hydrocarbons
10 g/m ²	Moderate: This value is considered appropriate to assess ecological impact risk, as it is the estimate for the minimum thickness of oil that will result in harm to seabirds through ingestion from preening of contaminated feathers, or the loss of thermal protection of their feathers. This has been estimated by at 10 to 25 g/m ² (French-McCay, 2009; Koops et al., 2004). Furthermore, based on literature reviews on aquatic birds and marine mammals (Clark, 1984; Engelhardt, 1983; Geraci and St Aubin, 1988; Jenssen, 1994), the exposure value for harmful impacts is 10 g/m ² . This exposure value is used to determine the risk of exposure that can cause adverse impact to turtles, seasnakes, marine mammals and seabirds. This threshold was selected as a reasonable and conservative value to apply to the risk evaluation with respect to surface hydrocarbons.
50 g/m ²	High: This high exposure value for surface oil is above the minimum threshold observed to cause ecological effect. At this concentration surface hydrocarbons would be clearly visible on the sea surface.
Shoreline Hydrocarbons	
10 g/m ²	Low: This low exposure value defines the area for potential socio-economic impacts (for example, reduction in aesthetic value of the area). This exposure value has been used to define the spatial extent of the EMBA from shoreline hydrocarbons.
100 g/m ²	Moderate: The concentration for exposure to hydrocarbons stranded on shorelines is derived from levels likely to cause adverse impacts to intertidal habitats and associated fauna. Studies have reported oil thicknesses of 0.1 mm (100 g/m ²) as the lethal exposure values for benthic epifaunal invertebrates on intertidal habitats (rock, artificial or human-made) and in intertidal sediments (mud, silt, sand and gravel) (French McCay, 2004; French McCay et al., 2003; French-McCay, 2009). It is also the impact threshold assumed for oiling of birds (French McCay, 2004). This exposure value has been used to inform the risk evaluation with respect to accumulated shoreline hydrocarbons and the threshold for shoreline response, based on possible clean-up options.
1,000 g/m ²	High: This low exposure value predicts the area likely to require intensive clean-up effort.

Threshold Exposure Value	Description
Entrained Hydrocarbons	
10 ppb	<p>Low: Total submerged hydrocarbons, also referred to as 'total water-accommodated fraction' or entrained hydrocarbons, encompass oil droplets in the water column. Much of the published scientific literature does not provide sufficient information to determine if toxicity is caused by the dissolved or the entrained hydrocarbon component, but rather the toxicity of total submerged hydrocarbons. Variation in the methodology of the water-accommodated fraction may account for much of the observed wide variation in reported threshold values, which also depend on the test organism, duration of exposure, oil type and the initial oil concentration.</p> <p>The 10 ppb exposure value represents the very lowest concentration and corresponds with the lowest trigger levels for total hydrocarbons in water recommended in the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality: Volume 1 - the Guidelines</i> (Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, 2000)</p>
100 ppb	<p>Moderate: This exposure value is considered conservative in terms of potential sub-lethal impacts to most species and lethal impacts to sensitive species based on literature for toxicity testing.</p> <p>Total oil toxicity acute effects of total oil as LC50 for molluscs range from 500 to 2000 ppb. A wider range of LC50 values have been reported for species of crustacea and fish from 100 to 258,000,000 ppb (Clark et al., 2001; Gulec et al., 1997; Gulec and Holdway, 2000) and 45 to 465,000,000 ppb (Barron et al., 2004; Gulec and Holdway, 2000) respectively.</p> <p>This exposure value has been used to define the spatial extent of the EMBA from total submerged hydrocarbons and used to describe environmental sensitivities within the EMBA. This exposure value has been used to inform the risk evaluation with respect to entrained hydrocarbons and used to describe environmental sensitivities within the EMBA.</p>
Dissolved Aromatic Hydrocarbons	
10 ppb	<p>Low: This low exposure value establishes the planning area for scientific monitoring (based on potential for exceeding water quality triggers).</p>
50 ppb	<p>Moderate: This exposure value approximates toxic effects, particularly sub-lethal effects to sensitive species (NOPSEMA, 2019). French-McCay et al. (2002) indicates an average 96-hour LC50 of around 50 ppb could serve as an acute lethal threshold. For most marine organisms, a concentration of between 50 and 400 ppb is considered to be more appropriate for risk evaluation.</p> <p>This exposure value has been used to inform the risk evaluation with respect to dissolved hydrocarbons and used to describe environmental sensitivities within the EMBA.</p>

8.1.3 Scientific Monitoring

A planning area for scientific monitoring is defined with reference to the low-exposure entrained value of 10 ppb detailed in *Bulletin #1 Oil Spill Modelling* (NOPSEMA, 2019). This low exposure threshold is based on the potential for exceeding water quality triggers.

The scientific environmental monitoring program would be activated in accordance with the petroleum activity OPEP (BHPB-00SC-N000-0004) (**Appendix D**), or any release event with the potential to contact sensitive environmental receptors.

8.2 Hydrocarbon Release – Marine Diesel

8.2.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Unplanned surface release of marine diesel oil	Surface release of MDO from a project vessel as a result of an external impact (vessel collision) which ruptures an MDO tank.	Temporary and localised reduction in water quality with potential for toxicity effects to marine fauna and flora, oiling of offshore, nearshore and shoreline habitats.	100	0.1	10	Type A Lower Order Risk	Tolerable
	Release of MDO during a bunkering incident	Impacts to socio-economic receptors.	10	0.3	3	Type A Lower Order Risk	Tolerable

8.2.2 Source of Hazard

8.2.2.1 Surface Release of Marine Diesel Oil from a Project Vessel as a Result of an External Impact (Vessel Collision) Which Ruptures a Marine Diesel Oil Tank

Project vessel fuel oil capacities are presented in **Section 3.9**. MDO on the project vessels is distributed into multiple single tanks on the project vessels. The largest single fuel tank is 1,000 m³ on a project vessel used for infrastructure removal activities (**Table 3-27**) and presents the maximum credible release volume that could be released in the event of a vessel collision. A 1,000 m³ marine diesel release was modelled at the DTM buoy (considered to be a representative location for the hydrocarbon spill risk assessment). During an unplanned field management scope (**Section 3.8**) a hydrocarbon release could occur closer to the coastline (at the State / Commonwealth waters boundary) as a result of vessel collision. However, the project vessel used for field management has a single fuel tank volume of 250 m³ (**Table 3-27**), substantially lower than the project vessel used for infrastructure removal activities. Therefore, the release from of 1,000 m³ of MDO at the DTM is considered the worst case MDO release for this EP.

The likelihood of a vessel collision is unlikely, given slow-moving vessel operations associated with the petroleum activity as well as the controls in place to prevent collision at sea.

Project vessels will be in the operational area for the duration of the petroleum activity. This presence will result in a navigational hazard for other marine users within the immediate area of the vessel, as detailed in **Section 7.1**. A review of the potentially active commercial fisheries (**Section 4.7.2**) along with consultation feedback (**Section 5**), determines it unlikely there will be active commercial fishing in the area. In addition, there are no recognised shipping routes in or near the operational area, with the nearest shipping fairway designated by AMSA located approximately 21 km to the north and west (**Figure 4-21**). Analysis of shipping traffic data indicates commercial vessels do use the general area.

8.2.2.2 Release of Marine Diesel Oil due to Leaking or Ruptured Bunker Transfer Equipment

Refuelling and bunkering at sea will occur during the subsea infrastructure removal activities. Bunkering incidents may occur as the result of a damaged refuelling hose, coupling failures, loss of connection, vessel collision or loss of vessel position. Spills resulting from overfilling will be contained within the vessel drains and slops tank system. If the refuelling hose is ruptured, the fuel bunkering activity will cease by turning off the pump; the fuel remaining in

the transfer line will escape to the environment in addition to the fuel that was released before stopping the transfer operation.

The guidance provided by AMSA (2015) for a bunkering spill under continuous supervision is considered appropriate, given bunkering will be constantly supervised. The maximum credible release volume during refuelling is calculated as transfer rate multiplied by 15 minutes of flow. The detection time of 15 minutes is seen as conservative but applicable after failure of multiple barriers followed by manual detection and isolation of the fuel supply. Based on an expected pumping rate of 150 m³/hour and a conservative time of 15 minutes to shut down the pumping operation once the fuel spill had been identified, a total release volume of around 37.5 m³ is proposed as the worst-case credible volume for a bunkering incident.

8.2.3 Oil Spill Modelling Results

The EMBA for the worst-case MDO release is presented in **Figure 4-1**. The outer extent of the EMBA is derived from the oil spill modelling defined using the hydrocarbon exposure thresholds in **Table 8-4** and is based on the combined area of contact for all hydrocarbon components (surface, shoreline dissolved and entrained hydrocarbons). The modelling results below are presented for each hydrocarbon component at the hydrocarbon exposure thresholds defined in **Table 8-5**.

8.2.3.1 Surface Hydrocarbons

8.2.3.1.1 Low Exposure (> 1 g/m²)

Surface hydrocarbons at the low exposure value are predicted to travel up to 164 km north-east of the release location. Receptors with the potential to be contacted at the low exposure value are:

- Gascoyne AMP
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF
- Exmouth Plateau KEF
- Continental Slope Demersal Fish Communities KEF

8.2.3.1.2 Moderate Exposure (> 10 g/m²)

Surface hydrocarbons at the moderate exposure value are predicted to travel up to 92 km south-west of the release location. Receptors with the potential to be contacted at the moderate exposure value are:

- Gascoyne AMP
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF
- Continental Slope Demersal Fish Communities KEF

8.2.3.1.3 High Exposure (> 50 g/m²)

Surface hydrocarbons at the high exposure value are predicted to travel up to 79 km north-east of the release location. Receptors with the potential to be contacted at the high exposure value are:

- Gascoyne AMP
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF
- Continental Slope Demersal Fish Communities KEF

Table 8-6 summarises receptors with the potential to be contacted at low, moderate and high surface hydrocarbon exposure thresholds.

Table 8-6: Summary of receptors with the potential to be contacted at the low, moderate and high surface hydrocarbon exposure thresholds

Receptor	Probability of Surface Hydrocarbon Exposure (%)			Minimum Time before Surface Hydrocarbon Exposure (days)		
	Low	Moderate	High	Low	Moderate	High
Gascoyne AMP	62	32	22	0.17	0.17	0.21
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF	45	22	16	0.08	0.08	0.08
Exmouth Plateau KEF	2	-	-	1.92	-	-
Continental Slope Demersal Fish Communities KEF	100	100	100	0.04	0.04	0.04

8.2.3.2 Shoreline Accumulated Hydrocarbons

There was no predicted shoreline accumulation of hydrocarbons at or above the low, moderate, or high thresholds.

8.2.3.3 Dissolved Hydrocarbons

8.2.3.3.1 Low Exposure (> 10 ppb)

Dissolved hydrocarbons at the low exposure value are predicted to travel up to 157 km south-south-west of the release location. Receptors with the potential to be contacted at the low exposure value are:

- Gascoyne AMP
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF
- Exmouth Plateau KEF
- Continental Slope Demersal Fish Communities KEF

8.2.3.3.2 Moderate Exposure (> 50 ppb)

Dissolved hydrocarbons at the moderate exposure value are predicted to travel up to 40 km south-west of the release location. Receptors with the potential to be contacted at the moderate exposure value are:

- Gascoyne AMP
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF
- Continental Slope Demersal Fish Communities KEF

8.2.3.3.3 High Exposure (> 400 ppb)

Dissolved hydrocarbons at the high exposure value are predicted to travel up to 2 km south-south-west of the release location. Receptors with the potential to be contacted at the high exposure value are:

- Continental Slope Demersal Fish Communities KEF

Table 8-7 summarises receptors with the potential to be contacted at the moderate dissolved hydrocarbon exposure threshold.

Table 8-7: Summary of receptors with the potential to be contacted at the moderate dissolved hydrocarbon exposure threshold

Receptor	Maximum Instantaneous Dissolved Hydrocarbon Concentration (ppb)	Probability of Instantaneous Dissolved Hydrocarbon Exposure (%)
Gascoyne AMP	197	8
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF	306	16
Exmouth Plateau KEF	13	-
Continental Slope Demersal Fish Communities KEF	525	42

8.2.3.4 Entrained Hydrocarbons

8.2.3.4.1 Low Exposure (> 10 ppb)

Entrained hydrocarbons at the low exposure value are predicted to travel up to 1,295 km north-north-west of the release location. Receptors with the potential to be contacted at the low exposure value are:

- Abrolhos AMP
- Argo-Rowley Terrace AMP
- Carnarvon Canyon AMP
- Gascoyne AMP
- Montebello AMP
- Shark Bay AMP
- Ningaloo AMP
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF
- Ancient coastline at 125 m depth contour KEF
- Wallaby Saddle KEF
- Exmouth Plateau KEF
- Commonwealth waters adjacent to Ningaloo Reef KEF
- Perth Canyon and Adjacent shelf break, and other west coast canyons KEFs
- Western demersal slope and associated fish communities KEF
- Continental slope demersal fish communities KEF
- Muiron Islands Marine Management Area
- Ningaloo marine park

8.2.3.4.2 High Exposure (> 100 ppb)

Entrained hydrocarbons at the high exposure value are predicted to travel up to 507 km south-south-west of the release location. Receptors with the potential to be contacted at the high exposure value are:

- Carnarvon Canyon AMP
- Gascoyne AMP
- Ningaloo AMP
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF

- Ancient coastline at 125 m depth contour KEF
- Exmouth Plateau KEF
- Commonwealth waters adjacent to Ningaloo Reef KEF
- Continental slope demersal fish communities KEF

Table 8-8 summarises receptors with the potential to be contacted at moderate entrained hydrocarbon exposure thresholds.

Table 8-8: Summary of receptors with the potential to be contacted at the moderate entrained hydrocarbon exposure thresholds

Receptor	Maximum Instantaneous Entrained Hydrocarbon Concentration (ppb)	Probability of Instantaneous Entrained Hydrocarbon Exposure (%)
Carnarvon Canyon AMP	118	2
Gascoyne AMP	12,507	41
Ningaloo AMP	318	2
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF	26,040	40
Ancient coastline at 125 m depth contour KEF	278	2
Exmouth Plateau KEF	1,523	14
Commonwealth waters adjacent to Ningaloo Reef KEF	318	2
Continental slope demersal fish communities KEF	43,090	85

8.2.4 Environmental Impact Assessment – Vessel Collision

The potential impacts of surface, shoreline, entrained and dissolved hydrocarbons on sensitive receptors occurring within the EMBA, and along the stretch of coastline where shoreline accumulation of hydrocarbons above 10 g/m² could occur from a worst-case MDO release, is provided in **Table 8-9**.

A worst-case MDO release to the marine environment would result in a localised and temporary reduction in water quality in the upper surface waters of the water column. While MDOs are generally considered to be non-persistent oils, they a small percentage by volume of hydrocarbons that are classified as persistent (refer **Section 8.1.1**).

When released at sea, MDO will spread and thin out quickly and more than half of the volume can be lost to evaporation. No shoreline contact above the impact threshold concentration is predicted to occur.

A number of BIAs overlap the EMBA (identified in **Section 4.6.2**). The impacts to these species have been discussed in **Table 8-9**.

Deteriorating water quality and chemical and terrestrial discharge is identified as a potential threat in several recovery plans and conservation advices (**Table 4-9**). Given the location of the release and worst-case credible release volume, there is the potential for modification to or a decrease in the availability of quality habitat for a period. However, given the low persistence of MDO, high evaporation and low stickiness, the quality of habitat will recover over a period of one to three years.

The Gascoyne, Montebello and Ningaloo AMPs are within the EMBA and have the potential to receive concentrations of entrained oil (at 100 ppb). Potential impacts may include impacts to benthic fauna and habitats

and associated impacts to demersal fish populations and reduced biodiversity. However, given the low maximum concentrations reaching the AMPs, it is not anticipated that the AMP values detailed in **Appendix C** will be compromised.

A worst-case release of MDO from a vessel collision has the potential to have an impact to the environment within the EMBA, lasting a period of one to three years. Given the extent, the worst-case severity is considered to be substantial.

8.2.4.1 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans for marine fauna that identify marine pollution as a threat (**Section 9**).

Table 8-9: Impacts of a 1,000 m³ MDO release on sensitive receptors

Receptor	Impacts of a 1,000 m ³ Diesel Release
<i>Marine Fauna</i>	
Plankton (including zooplankton; coral larvae and benthic invertebrates)	<ul style="list-style-type: none"> ▪ Plankton could include the eggs and larvae of marine invertebrates (including coral) and fish. Physical contact of small hydrocarbon droplets may impair plankton mobility, feeding and respiration. ▪ There is potential for localised mortality of plankton due to reduced water quality and toxicity. ▪ The likelihood of impacts to plankton would be determined by the extent and timing of the spill; for example, hard coral spawning occurs primarily in March/April, so there is a heightened potential for impacts to coral eggs and larvae to occur during this period. ▪ The different life stages of plankton often show widely different tolerances and reactions to oil pollution. Usually the eggs, larval and juvenile stages will be more susceptible than the adults. Surface and entrained oil could impact fish eggs and larvae due to entrainment in surface slicks. However, fish eggs and larvae are highly dispersive and are carried significant distances by ocean currents. Any impacts to fish eggs and larvae are not anticipated to significantly impact on fish populations. ▪ The abundance and diversity of epi-benthic invertebrates is likely to be highest in shallow subtidal habitats such as hard corals, seagrasses and macroalgae, which are present along the Ningaloo coastline.
Fish, sharks and rays (including commercial species)	<ul style="list-style-type: none"> ▪ While no whale shark BIA's overlap the operational area, there are two in proximity – a foraging (high prey density) BIA off the Ningaloo coast (approximately 32 km south the operational area) and a foraging BIA which extends along the North West Shelf (approximately 19 km from the operational area). Whale sharks are oceanic, but also come into shallower coastal waters to feed in surface waters which often coincide with specific productivity events that are a focus of feeding for the animals. ▪ Whale sharks feed on plankton, krill and fish bait near or on the water surface and they are often observed swimming near the surface during seasonal aggregations. It is possible they may come into direct contact with surface hydrocarbons or hydrocarbons in the water column during their known aggregation around Ningaloo coast. ▪ The most likely impact to fish, shark and rays is from the dissolved aromatic hydrocarbons or entrained hydrocarbon droplets, particularly when through the pathways of ingestion or the coating of gill structures. This could lead to respiratory problems (reduction in oxygen exchange efficiency) or an accumulation of hydrocarbons in tissues. ▪ The shallower intertidal reef areas around the Ningaloo Reef and Muiron Islands are considered to include fish habitats most sensitive to surface oil. Potential direct impacts may include gill contamination, enlarged livers, fin erosion, metabolic stress, reduced production survival of eggs and larvae and reduced survival and growth of recruits (Giari et al., 2012; Theodorakis et al., 2012). ▪ Near the sea surface, fish are likely to be able to detect and avoid contact with surface slicks and as a result, fish mortalities rarely occur in open waters from floating oils (International Tanker Owners Pollution Federation, 2011). Pelagic fish species are therefore generally not highly susceptible to impacts from hydrocarbon spills. Demersal fish species living and feeding on or near the seabed in deeper waters are not likely to be affected by surface and entrained oil in open waters. Likewise, most reef fish are expected to occur at water depths significant enough to be unaffected by surface oil, whereas reef fish in shallow waters (< 10 m) and sheltered embayments are at greatest risk from surface oil (Kirby et al., 2018), particularly if they are territorial and unlikely to leave their habitat.

Receptor	Impacts of a 1,000 m ³ Diesel Release
	<ul style="list-style-type: none"> ▪ While fish, sharks and rays do not generally break the sea surface, individuals may feed near the surface for short periods. The probability of prolonged exposure to a surface slick by fish, shark and ray species is unlikely.
Marine mammals	<ul style="list-style-type: none"> ▪ Twelve marine mammals were identified by the EPBC Protected Matters search for the EMBA (Section 4.6.1). BIAs overlapping the EMBA include: <ul style="list-style-type: none"> – humpback whale – migration (north and south) and resting – pygmy blue whale – foraging and migration – dugong – breeding, foraging (high density seagrass beds), nursing and calving. ▪ Humpback whale migration in this region is characterised by three directional phases, being: <ul style="list-style-type: none"> – northbound phase – starts June, peaks July and tapers off by early August – transitional phase (peak numbers expected at this time) – occurring late August and early September – southbound phase – occurring early August until the end of November (this phase is segmented by a two- to three-week delay in appearance of peak numbers of cow/calf pods after the main migratory body has passed). ▪ Marine mammals (whales, dolphins and dugongs) come to the sea surface to breathe air. They are therefore theoretically vulnerable to impacts caused by contact with hydrocarbons at the sea surface. Whales and dolphins are smooth-skinned, hairless mammals so oil tends not to stick to their skin and since they do not rely on fur for insulation, they are therefore not as sensitive to the physical effects of oiling. ▪ Ingested oil, particularly the lighter fractions, can be toxic to marine mammals. Ingested oil can remain within the gastro-intestinal tract and be absorbed into the bloodstream and thus irritate and destroy epithelial cells in the stomach and intestine. ▪ The way whales and dolphins consume their food may affect the likelihood of their ingesting oil. Baleen whales (such as humpback whales), which skim the surface, are more likely to ingest oil than toothed whales, which are ‘gulp feeders’ (Helm et al., 2015). Spilled oil may also foul the baleen fibres of baleen whales, thereby impairing food-gathering efficiency or resulting in the ingestion of oil or oil-contaminated prey. Baleen whales may therefore be vulnerable to oil if feeding. Weathered oil residues from an oil spill event may persist for long periods, causing a potential risk to baleen whales’ feeding systems. It should be noted that adult humpback whales, which are seasonally present and relatively abundant in the region, are not thought to be feeding during their migration through the region. ▪ Dugongs are common in several locations along the Ningaloo coastline and the Muiron Islands where there are seagrass beds. ▪ Dugongs may be indirectly impacted via habitat loss due to reduction in seagrass from contact with entrained hydrocarbons. Direct impacts to dugongs could occur through foraging or ingesting seagrass coated with hydrocarbon. Additionally, where surface slicks are expected to extend into shallower coastal waters, impacts from contact with surface hydrocarbons may also occur as they surface to breathe.
Marine reptiles	<ul style="list-style-type: none"> ▪ BIAs and Critical Habitats for the flatback turtle, green turtle, hawksbill turtle and loggerhead turtle all are within the extent of the EMBA (Section 4.6.2).

Receptor	Impacts of a 1,000 m ³ Diesel Release
	<ul style="list-style-type: none"> ▪ Important areas for marine turtles that may be exposed to hydrocarbons include the North West Cape of the Ningaloo coast and the Muiron Islands. ▪ Direct contact of marine turtles with hydrocarbons and exposure from hydrocarbon components may lead to: <ul style="list-style-type: none"> – digestion and absorption of hydrocarbons through food contamination or direct physical contact, leading to damage to the digestive tract and other organs – irritation of mucous membranes (such as those in the nose, throat and eyes), leading to inflammation and infection – eggs possibly contaminated and their development inhibited or lead to developmental defects in hatchlings, either due to oil on the nesting beach or through transference from the adult turtles while laying the eggs. – oiling of hatchlings, after emerging from the nests, as they make their way across the beach to the water. ▪ The greatest potential for impact to turtles or seasnakes is likely to be in feeding areas where surface and entrained hydrocarbons have contacted shallow water foraging habitats (such as seagrass, hard coral and macroalgae) or, in the case of turtles, at any turtle nesting beaches that have been contacted. ▪ Marine turtles are vulnerable to the effects of hydrocarbon spills at all life stages (eggs, post hatchlings, juveniles and adults) while in the water or onshore (NOAA, 2010). ▪ Green, hawksbill, flatback and loggerhead turtles use shallow waters and nesting beaches along coastlines of the Ningaloo Coast and Muiron Islands. The risk at these nesting beaches is for hydrocarbons to contact adult females during nesting season or when newly hatched turtles enter the water from nesting beaches. Hatched turtles are likely to be highly susceptible to oiling from either shoreline-accumulated oil or surface oil; however, impacts would be highly seasonal and limited to the periods when hatchlings emerge from the nests six to eight weeks after nesting by adults. ▪ Several species of seasnake are known to occur in the EMBA. The sensitivity of seasnakes to hydrocarbon spills has been poorly studied. It is expected that susceptibility will be due to their need to surface in order to breathe. Seasnakes may also be susceptible to toxic effects through ingestion of contaminated prey items.
Seabirds and shorebirds	<ul style="list-style-type: none"> ▪ Birds exposed to hydrocarbons may suffer a range of internal and external health effects. Direct contact with hydrocarbons and exposure from hydrocarbons has the potential to cause: <ul style="list-style-type: none"> – oiled feathers affecting the ability of the birds to fly and those birds on the sea surface may suffer from loss of buoyancy and drown or die from hypothermia – skin irritation or ulceration of eyes, mouth or nasal cavities – internal effects from poisoning or intoxication through ingestion, preening and ingestion of oil via their prey items – reduced reproduction ability – reduction in the number of eggs laid – decreased shell thickness – disruption of the normal breeding and incubating behaviours.

Receptor	Impacts of a 1,000 m ³ Diesel Release
	<ul style="list-style-type: none"> ▪ The operational area overlaps with the wedge-tailed shearwater BIA (breeding) (Section 4.6.2). The nearest colony of wedged-tailed shearwaters is the Muiron Islands, approximately 46 km south-east of the operational area. A number of other seabird BIAs have been identified within the EMBA (Section 4.6.2). ▪ The surface oil component poses the greatest risk of impact to seabirds due to the amount of time they spend on or near the sea surface. Individuals are at risk of lethal or sub-lethal physical and toxic effects due to external exposure (oiling of feathers) and ingestion, especially those close to the source point where concentrations are at their highest. Even small quantities of feathers contaminated by oil can be lethal, causing hypothermia and reduced buoyancy (O'Hara and Morandin, 2010). Seabirds are less likely to be affected by entrained and dissolved hydrocarbons, except through the ingestion of contaminated prey. ▪ The waters of the North West region of Western Australia support large populations of seabirds, predominantly tern species, and the EMBA includes important breeding, feeding, foraging and refuge sites for a number of EPBC Act-listed migratory and threatened seabirds. The seabirds that most commonly occur within the EMBA include albatross, petrels, terns and shearwaters (refer Table 4-6). Seabirds spend most of their time at sea, travelling over large distances to forage over the open ocean, returning to land during breeding only; therefore, some seabirds may transit the offshore waters of the EMBA and come into contact with surface oil. While individual seabirds may be affected, it is not predicted that large numbers of seabirds will be impacted from surface oil as they are unlikely to be present in significant numbers due to their vast distribution area. The risk of impact is greater should a release occur within the chick-rearing period, where adults forage closer to breeding colonies. ▪ Shoreline-accumulated oil below impact threshold is predicted at Exmouth, Muiron Islands, Flat Island and Peak Island. These habitats (particularly those with intertidal mud flats and sandy beaches) are important staging sites for migratory shorebirds and important breeding sites. Given no hydrocarbons were predicted to accumulate on shorelines above impact thresholds and the low persistent nature of MDO, significant impacts from shoreline accumulation are not anticipated.
Inter-tidal / Sub-tidal Habitats	
Intertidal sandy beaches / mud flats	<ul style="list-style-type: none"> ▪ Sandy beaches and intertidal sediments occur extensively along the Ningaloo coast and the Muiron Islands. ▪ The above represents an important habitat that supports burrowing fauna of crabs, mainly ghost crabs, and burrowing bivalve molluscs, as well as a diverse community of benthic infauna comprising polychaetes, crustaceans and gastropods. In addition, the beaches provide seasonally important habitat for turtle nesting, breeding seabirds and migratory wading birds. The impacts from hydrocarbons are described previously above. ▪ Temporary declines in infauna and epifauna populations may have indirectly affect feeding shorebirds, seabirds and migratory wading birds. ▪ Given no hydrocarbons were predicted to accumulate on shorelines above impact thresholds and the low persistent nature of MDO, significant impacts from shoreline accumulation are not anticipated.

Receptor	Impacts of a 1,000 m ³ Diesel Release
Macroalgal and seagrass beds	<ul style="list-style-type: none"> • Macroalgal beds occur both intertidally and subtidally within the moderate exposure value area of the EMBA, particularly along the western shores of the North West Cape and around the Muiron Islands. Macroalgae on reef fronts and reef edges would not be exposed to direct surface hydrocarbons but may be exposed to entrained hydrocarbons. • Impact of hydrocarbons on macroalgae, particularly on intertidal shores, largely depends on the degree of exposure, the degree of wave and tidal action and how much of the hydrocarbon adheres to the seagrass or macroalgae. Macroalgae is predicted to recover quickly as a result of wind, wave and tidal-driven coastal processes that naturally flush the hydrocarbons. • Impacts could include reduced capability for photosynthesis if the seagrass or macroalgae were smothered, or toxic effects could occur from contact with the hydrocarbon. • Impacts to seagrass may present secondary impacts to species reliant on the habitat, such as dugongs.
Coral reefs	<ul style="list-style-type: none"> ▪ Potential exists for corals to be contacted by entrained hydrocarbons along the Ningaloo coastline and Muiron Islands. ▪ Direct contact by dissolved hydrocarbons can cause lethal and sub-lethal effects in corals, depending on the time and duration of exposure of the concentrations, with sub-lethal effects including decreased growth rates and reduced reproductive success (International Petroleum Industry Environmental Conservation Association, 1992). In the worst-case instance, irreversible tissue necrosis and death could occur. ▪ Corals on reef fronts, reef edges and in deeper lagoonal areas will come into contact with entrained oil through dispersion or by dissolution of toxic hydrocarbons into the water column. ▪ Given MDO has a relatively low persistence and is not considered a sticky oil, coral exposure to the worst-case MDO release is expected to be temporary.
Mangroves	<ul style="list-style-type: none"> ▪ • Potential exists for mangroves to be contacted by hydrocarbons along the Ningaloo coastline and Muiron Islands. ▪ • Mangrove root systems (including pneumatophores) are sensitive to physical oiling from surface hydrocarbons. Impacts to mangroves include yellowing of leaves, defoliation, reduced reproductive output and success, mutation and increased sensitivity to other stresses (NOAA, 2010). There is the potential for stands of mangroves at shorelines, notably along the Ningaloo Coastline (such as at Mangrove Bay and at Yardie Creek) to be contacted. ▪ Given no hydrocarbons were predicted to accumulate on shorelines above impact thresholds and the low persistent nature of MDO, significant impacts from shoreline accumulation are not anticipated.
Shoreline Habitat	
Shoreline Habitats	<ul style="list-style-type: none"> ▪ Given no hydrocarbons were predicted to accumulate on shorelines above impact thresholds and the low persistent nature of MDO, significant impacts to shoreline habitats are not anticipated.

Receptor	Impacts of a 1,000 m ³ Diesel Release
Socio-economic	
Socio-economic	<ul style="list-style-type: none"> ▪ The EMBA overlaps Commonwealth- and State-managed fisheries. ▪ Hydrocarbons in the water column can have toxic effects on fish (as outlined above) and cause ‘tainting’, reducing catch rates and rendering fish unsafe for consumption. ▪ Exclusion zones surrounding a spill can directly impact fisheries by restricting access for fishermen.
Tourism and recreation	<ul style="list-style-type: none"> ▪ There is a wide variety of nature-based tourism and recreational activities, including recreational fishing, that occurs in the EMBA. Much of this occurs in the Ningaloo/Exmouth area during the peak tourism season from April to October, although some of the offshore islands also attract visitors such as the Muiron Islands. In an oil spill, there is the potential for temporary closure of all recreational activities, including diving, due to the risk to public health and safety. Similar impacts arising from the shoreline stranding of hydrocarbons will add a visual impact and potentially restricted access to shorelines. ▪ Impacts to recreational fishing may also occur due to impacts to fish as described for fisheries above.
Defence	<ul style="list-style-type: none"> ▪ Military exercise areas are located at Exmouth associated with Royal Australian Air Force Base Learmonth (refer to Section 4.7.7). These training zones overlap the operational area and EMBA. However, they are designated for aerial training and are unlikely to be impacted by a hydrocarbon release
Shipping	<ul style="list-style-type: none"> ▪ The impact on shipping in the event of a worst-case discharge is likely to be limited to the potential for minor modification of shipping routes through the implementation of exclusion zones to avoid the spill. Shipping operations may be affected by spill response efforts by way of a NOTMAR being issued to avoid the area, leading to the potential diversion from normal shipping routes.
Oil and gas activities	<ul style="list-style-type: none"> ▪ Multiple oil and gas operators have operations within the EMBA. In a large-scale release, petroleum production operations in the region would likely remain unaffected, unless a surface slick was within the vicinity and considered to represent a safety hazard, at which time the likely response would be to cease production activities. A potential second order effect that may also cause production to cease is a closure of the surrounding areas, such as for safety or navigation control, preventing offtake tankers or support vessels from operating in the area. The impact of ceasing production would be the postponement of income from sales.
Cultural values and Heritage	<ul style="list-style-type: none"> ▪ Through consultation and review of available literature (Section 4.7.1), Woodside understands that sea country, including marine ecosystems and species, archaeological heritage and heritage sites, marine parks, as well as intangible cultural heritage may be impacted in the event of a hydrocarbon release from a vessel collision. Cultural features and heritage values that have the potential to be impacted include: <ul style="list-style-type: none"> – Marine ecosystems and species: Marine ecosystems may hold both cultural and environmental value to Traditional Custodians (Section 4.7.1), with cultural and environmental values intrinsically linked (DCCEEW 2023, MAC 2021 as cited in Woodside 2023d). It necessarily follows that an impact to marine ecosystems has the potential to impact cultural features where the impact is detectable

Receptor	Impacts of a 1,000 m ³ Diesel Release
	<p>within Sea Country—the seascape which Traditional Custodians view, interact with or hold knowledge of. The EMBA is known to include habitat for culturally important species such as whales, whale sharks, turtles, dugongs, plankton, and seagrass (Section 4.6 and 4.7.1). In the event of a worst-case release of MDO individual fauna may be directly impacted or impacted through temporary degradation of their habitats, however, no population level impacts as expected. Impacts are not expected to occur to ecologically significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.</p> <ul style="list-style-type: none"> - Heritage Sites: The EMBA overlaps 43 Registered Aboriginal Heritage Sites (Section 4.7.1.5). Any oil that reaches the shoreline has potential to impact on registered sites and indigenous heritage places along the coastline. In the unlikely event of a hydrocarbon release, shoreline accumulation may affect sensitive artefacts or areas, which could damage their heritage value. However, due to the low maximum concentrations predicted to reach any marine park, their environmental values are expected to be maintained. - Marine Parks: The EMBA overlaps seven AMPs and two State Protected Area. Management Plans for these parks recognise cultural values of Indigenous groups (Section 4.7.1.4). Due to the low maximum concentrations predicted to reach any marine park, their environmental values are expected to be maintained. - Intangible cultural heritage: Impacts may occur to intangible cultural values such as songlines; creation/dreaming sites, sacred sites, ancestral beings; cultural obligations to care for Country; knowledge of Country/customary law and transfer of knowledge; connection to Country; Access to Country; kinship systems and totemic species, resource collection. Related intangible cultural heritage may include the transmission of cultural knowledge about whales and whale behaviour, including birthing areas, whale communication and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn 2021). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes 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). In the unlikely event of a hydrocarbon release, intangible cultural heritage values may be impacted.
Maritime heritage	<ul style="list-style-type: none"> ▪ There are a number of shipwrecks in the EMBA. Notable shipwrecks include three historic shipwrecks at Pt Cloates along the Ningaloo Coast (Fin, Perth and Zvir) and one historic shipwreck at North West Cape (Fairy Queen). It is unlikely contact would have any lasting impact on these sites, apart from a possible temporary reduction in aesthetic value for a period. ▪ Surface hydrocarbons will have no impact on shipwrecks. ▪ Hydrocarbons in the water column may potentially impact those microbial and encrusting communities that may in turn affect the structural integrity of the shipwreck.
Protected / Significant Areas	
World Heritage and National Heritage	<ul style="list-style-type: none"> ▪ The Ningaloo Coast with World Heritage and National Heritage listings falls within the EMBA (Sections 4.5.2 and 4.5.3). ▪ The environmental values and sensitivities of the Ningaloo coast are described in Appendix C. The potential impacts to these are described in the relevant sections of this table.

Receptor	Impacts of a 1,000 m ³ Diesel Release
Australian and State Marine Parks	<p>The EMBA overlaps several Marine Parks (refer to Sections 4.5.5):</p> <ul style="list-style-type: none"> ▪ Australian Marine Parks: <ul style="list-style-type: none"> - Gascoyne - Ningaloo - Montebello - Carnarvon Canyon - Shark Bay - Abrolhos - Argo-Rowley Terrace. ▪ State Marine Parks: <ul style="list-style-type: none"> - Ningaloo Marine Park - Muiron Islands Marine Management Area ▪ The environmental values and sensitivities of these Marine Parks are described in Appendix C. The potential impacts to these values are described in the relevant sections of this table.
Key ecological features	<ul style="list-style-type: none"> ▪ The EMBA overlaps several KEFs (refer to Section 4.5.1): <ul style="list-style-type: none"> - Continental Slope Demersal Fish Communities - Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula - Commonwealth waters adjacent to Ningaloo Reef - Ancient coastline at 125 m depth contour - Exmouth Plateau - Western demersal slope and associated fish communities - Wallaby Saddle - Perth Canyon and adjacent shelf break, and other west coast canyons ▪ The environmental values and sensitivities of these KEFs are described in Appendix C and the potential impacts are described in the relevant sections of this table. Most of these KEFs are entirely subtidal. The benthic communities and habitats associated with these KEFs, such as filter-feeding communities and demersal fish assemblages, are not predicted to be impacted by hydrocarbons in the event of a hydrocarbon release, based on the water depths at which they occur. However, the pelagic marine faunal assemblages that are attracted to the nutrient-rich waters, such as whales, whale sharks, large pelagic fish and seabirds, are at risk of impacts from surface and entrained hydrocarbons.

8.2.5 Environmental Impact Assessment – Bunkering Incident

Potential impacts to receptors found within the EMBA are described in **Table 8-9**. A release of MDO during bunkering will be much reduced in terms of spatial and temporal scales compared to a worst-case MDO release from a vessel collision (assessed above).

It is considered that there is no potential for contact with shorelines from a bunkering incident within the operational area. Impacts will be confined to the local environment only.

For marine mammals that may be exposed to the more toxic aromatic components of the minor release of MDO, toxic effects are considered unlikely, since these species are mobile and therefore will not be constantly exposed for extended durations that would be required to cause any major toxic effects. Any impacts will be minor and temporary.

A number of BIAs overlap the operational area (identified in **Section 4.6.2**), including humpback whale migration, pygmy blue whale distribution, whale shark foraging, flatback, green and hawksbill turtle inter-nesting buffers. Given the low volume of MDO release from a bunkering incident, the release will not interfere with humpback migration activity.

It is possible individual turtles may be encountered and come into contact with the release; however, considering the water depths of the operational area compared to observed water depths of inter-nesting turtles, large numbers of the species are not expected and any impacts will be minor and temporary.

8.2.5.1 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans for marine fauna that identify marine pollution as a threat (**Section 9**).

8.2.6 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 8-10**. This process was completed as outlined in **Section 6.1.4** 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 8-10: Marine diesel release - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Eliminate</i>			
Eliminate use of vessels.	Reject	Control not considered feasible. The use of vessels is required to conduct the petroleum activities.	Not applicable
Refuel project vessel in port.	Reject	Control is not considered feasible and does not eliminate the fuel transfer risk. It is not operationally practical to transit project vessel back to port for refuelling based on the frequency of the refuelling requirements and distance from the nearest port. Eliminates the risk in the operational area, However, moves risk to another location. Therefore, no overall benefit. Significant cost sacrifice due to schedule delay and vessel transit costs and day rates. Control grossly disproportionate to the benefit gained and therefore not adopted.	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
No refuelling of helicopter on project vessels	Reject	Control is not considered feasible given the distance of the operational area from the airports suitable for helicopter operations. Helicopter flights cannot be eliminated and may be required in emergency situations.	Not applicable
Substitute			
The project vessel will use marine diesel. No intermediate or heavy fuel oils will be used.	Accept	Marine diesel is a light fuel oil and is less persistent in the marine environment than intermediate or heavy fuel oils. Limiting project vessels to marine diesel reduces the risk to the marine environment in the event of a spill. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 9.1
Engineering			
Bunkering equipment controls: <ul style="list-style-type: none"> ▪ All hoses that have a potential environmental risk following damage or failure shall be linked to the vessels preventative maintenance system. ▪ There shall be dry-break couplings and flotation on fuel hoses. ▪ There shall be an adequate number of appropriately stocked, located and maintained spill kits. 	Accept	Reduces the likelihood of a spill occurring. Although no significant reduction in consequence could result, the overall risk is reduced. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 9.2.1 PS 9.2.2 PS 9.2.3
Administrative			
Marine Order 91 (marine pollution prevention – oil) 2014, requires Ship Oil Pollution Emergency Plan (SOPEP)/Spill Monitoring Programme Execution Plan (SMPEP) (as appropriate to vessel class).	Accept	By ensuring a SOPEP/SMPEP is in place for the vessel, the likelihood of a spill entering the marine environment is reduced. Although no significant reduction in consequence could result, the overall risk is reduced. Control is based on a legislative requirement and must be adopted. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 9.3
Vessels implement SIMOPS procedures in consultation with other vessel operators to assure safe simultaneous	Accept	SIMOPS Plan contains detail such as communications requirements, exclusion zones and entry/exit requirements and roles and responsibilities – which can help	PS 9.4

Control Measure	Accept / Reject	Reason	Associated Performance Standards
operations		reduce likelihood of vessel collision. Control is standard practice and can be implemented at minimal cost. Benefits outweigh cost/sacrifice.	
<p>Contractor procedures include requirements to be implemented during bunkering/refuelling operations, including:</p> <ul style="list-style-type: none"> ▪ A completed PTW and/or Job Safety Assessment (JSA) shall be implemented for the hydrocarbon bunkering/refuelling operation. ▪ Visual monitoring of gauges, hoses, fittings and the sea surface during the operation. ▪ Hose checks prior to commencement. ▪ Bunkering/refuelling will commence in daylight hours. If the transfer is to continue into darkness, the JSA risk assessment must consider lighting and the ability to determine if a spill has occurred. ▪ Hydrocarbons shall not be transferred in marginal weather conditions 	Accept	Reduces the likelihood of a spill occurring. Although no significant reduction in consequence could result, the overall risk is reduced. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 9.5
<p>Project vessel compliant with navigation safety requirements including the Navigation Act 2012 and any subsequent Marine Orders (21 & 30), which specify:</p> <ul style="list-style-type: none"> ▪ navigation (including lighting, compass/radar), bridge and communication equipment will comply with appropriate marine navigation and vessel safety requirements ▪ Automatic Identification System (AIS) is fitted and maintained in accordance with 	Accept	<p>Legislative requirements to be followed which reduces the risk of third-party vessel interactions due to ensuring safety requirements are fulfilled and other marine users are aware of the presence of project vessels.</p> <p>The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 1.1

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<p>Regulation 19-1 of Chapter V of SOLAS</p> <ul style="list-style-type: none"> crew performing vessel bridge-watch will be qualified in accordance with AMSA Marine Order Part 3: Seagoing Qualifications or certified training equivalent 			
<p>Establishment of a 500 m safety exclusion zone around project vessel and communicated to marine users.</p>	Accept	Control is based on legislative requirements and must be adopted; reduces likelihood of vessel collision with third parties. Third-party vessels must navigate the exclusions zone to reduce the risk. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.2
<p>AHO notified of activity no less than four working weeks prior to undertaking the petroleum activity</p>	Accept	Notification to AHO will enable them to generate navigation warnings. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.3
<p>Notify relevant fishing industry government departments, representative bodies and licence holders of activities prior to commencement and upon completion of activities.</p>	Accept	Communicating the activities to other marine users ensures they are informed and aware, thereby reducing the likelihood of interfering with other marine users. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.4
<p>Notify DoD at least five weeks prior to the scheduled activity commencement date</p>	Accept	Notification was requested by DoD during consultation. Communicating the activities to other marine users ensures they are informed and aware, thereby reducing the likelihood of interfering with other marine users. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.5
<p>Notify AMSA JRCC of activities 24–48 hours of undertaking the petroleum activities</p>	Accept	Communicating the activities to other marine users ensures they are informed and aware, thereby reducing the likelihood of interfering with other marine users. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.6
Pollution Control			
<p>In the event of a spill, emergency response activities implemented in accordance with the OPEP</p>	Accept	Implementing the OPEP efficiently to deal with unplanned hydrocarbon spills will help to reduce impacts to the marine environment.	PS 9.6

Control Measure	Accept / Reject	Reason	Associated Performance Standards
(per Table 11-14)		The control is feasible and standard practice. Costs associated with implementing response strategies vary dependant on nature and scale of spill event. Benefits outweigh any cost sacrifice.	
Arrangements supporting the activities in the OPEP (per Table 11-15) will be tested to ensure the OPEP can be implemented as planned.	Accept	Testing the OPEP activities would not reduce the likelihood, but response activities may reduce the consequence. The control is feasible and standard practice. Moderate costs associated with conducting exercises for the purpose of testing arrangements. Benefits outweigh any cost sacrifice.	PS 9.7.1 PS 9.7.2

8.2.6.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 8-10**) that when implemented are considered to manage the risks of a marine diesel hydrocarbon release to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential risks of a marine diesel hydrocarbon release. Additional reasonable control measures were identified in **Table 8-10** 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.

8.2.7 Demonstration of Acceptability

Given the adopted controls, the risk of a marine diesel hydrocarbon release will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in Table 8-10.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the risk of a marine diesel hydrocarbon release have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (**Section 9**). The environmental risks meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The unplanned hydrocarbon release risk, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect. The unplanned hydrocarbon release risk assessment was informed by industry-standard modelling, which includes the worst-case credible spill scenario, incorporates inherent uncertainty and is consistent with the precautionary principle.
- Inter-generational principle: The unplanned hydrocarbon release risk will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The unplanned hydrocarbon release risk will not impact upon biodiversity or ecological integrity in the long-term. The controls Woodside will implement reduce the risk of a MDO spill to ALARP.

During consultation, BYAC asked to be kept informed of activities given potential for coastline areas of migrating species to be impacted in the event of a spill. Woodside will continue to engage with BYAC as part of ongoing consultation. During consultation, Malgana raised its views that there are flaws in spill modelling related to Shark

Bay hydrodynamics. Woodside has provided further information to representatives of Malgana on spill modelling inputs and results. There is no predicted contact at Shark Bay for a worst-case MDO spill during activities subject of this EP. Malgana also asked questions regarding spill response arrangements, which were addressed during the meeting. No further objections or requests for information were raised.

During a meeting with Nanda, a number of questions related to oil spills were raised (e.g., has Woodside had a spill in the past, details of spill response measures particularly for shoreline impact, and whether Woodside's activities are resistant to cyclone events) which Woodside provided responses to and no further concerns or comments were raised.

During meetings with NAC, WAC and RRRKAC, a number of questions related to oil spills were raised (e.g. emergency preparedness, relevance of the EMBA to consultation, whether a diesel spill would only be on the surface, how long diesel stays in the environment, and how soon a spill is responded to) which Woodside provided responses to and no further concerns or comments were raised. Consultation related to hydrocarbon spills also occurred with DMIRS, DBCA, NCWHAC, DNP, DoT, CCG, Shire of Carnarvon. A summary of all consultation conducted for this EP is included in **Appendix F**.

Woodside considers the risk to be managed to an acceptable level.

8.2.8 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 8-11: Environmental performance outcomes, performance standards and measurement criteria for Atmospheric Emissions - interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 9.1 No release of hydrocarbons to the marine environment due to a vessel collision during the petroleum activity.</p> <p>EPO 9.2 Undertake the petroleum activity in a manner that will prevent an unplanned release of hydrocarbons to the marine environment from bunkering and refuelling activities that results in a substantial change in water quality which may adversely impact on biodiversity, ecological integrity, social amenity or human health.</p>	C 1.1 (refer to Section 7.1.6)	PS 1.1 (refer to Section 7.1.6)	MC 1.1.1 (refer to Section 7.1.6)
	C 1.2 (refer to Section 7.1.6)	PS 1.2 (refer to Section 7.1.6)	MC 1.2.1 (refer to Section 7.1.6)
	C 1.3 (refer to Section 7.1.6)	PS 1.3 (refer to Section 7.1.6)	MC 1.3.1 (refer to Section 7.1.6)
	C 1.4 (refer to Section 7.1.6)	PS 1.4 (refer to Section 7.1.6)	MC 1.4.1 (refer to Section 7.1.6)
	C 1.5 (refer to Section 7.1.6)	PS 1.5 (refer to Section 7.1.6)	MC 1.5.1 (refer to Section 7.1.6)
	C 1.6 (refer to Section 7.1.6)	PS 1.6 (refer to Section 7.1.6)	MC 1.6.1 (refer to Section 7.1.6)
	C 9.1 Marine Order 91 (marine pollution prevention – oil) 2014, requires Ship Oil Pollution Emergency Plan (SOPEP)/Spill Monitoring Programme Execution Plan (SMPEP) (as appropriate to vessel class).	PS 9.1 Appropriate initial responses prearranged and drilled in the event of a hydrocarbon spill, as appropriate to vessel class.	MC 9.1.1 Marine assurance records demonstrate compliance with Marine Order 91.
	C 9.2 Project vessels will use marine diesel. No intermediate or heavy fuel oils will be used.	PS 9.2 Project vessels to operate on marine diesel during the petroleum activity; no intermediate or heavy fuel oils will be used.	MC 9.2.1 Records demonstrate project vessels are operating on marine diesel.
	C 9.3 Bunkering equipment controls: <ul style="list-style-type: none"> ▪ All hoses that have a potential environmental risk following damage or failure shall be linked to the vessels preventative maintenance system. ▪ There shall be dry-break couplings and flotation on fuel hoses. 	PS 9.3.1 To ensure damaged equipment is replaced prior to failure.	MC 9.3.1 Records demonstrate project vessels are compliant with bunkering equipment controls.
		PS 9.3.2 All fuel transfer hoses to have dry break couplings and floatation.	
PS 9.3.3			

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<ul style="list-style-type: none"> ▪ There shall be an adequate number of appropriately stocked, located and maintained spill kits. 	To ensure adequate resources are available to allow implementation of SOPEP.	
	<p>C 9.4 Vessels implement SIMOPS procedures in consultation with other vessel operators to assure safe simultaneous operations.</p>	<p>PS 9.4 Project vessels compliant with approved SIMOPS Plan.</p>	<p>MC 9.4.1 Records demonstrate approved SIMOPS Plan in place prior to any simultaneous operations in the Stybarrow field.</p>
	<p>C 9.5 Contractor procedures include requirements to be implemented during bunkering/refuelling operations, including:</p> <ul style="list-style-type: none"> ▪ A completed PTW and/or Job Safety Assessment (JSA) shall be implemented for the hydrocarbon bunkering/refuelling operation. ▪ Visual monitoring of gauges, hoses, fittings and the sea surface during the operation. ▪ Hose checks prior to commencement. ▪ Bunkering/refuelling will commence in daylight hours. If the transfer is to continue into darkness, the JSA risk assessment must consider lighting and the ability to determine if a spill has occurred. ▪ Hydrocarbons shall not be transferred in marginal weather conditions 	<p>PS 9.5 Compliance with Contractor procedures for the management of bunkering/helicopter operations.</p>	<p>MC 9.5.1 Records demonstrate bunkering/refuelling undertaken in accordance with contractor bunkering procedures.</p>
	<p>C 9.6 In the event of a spill, emergency response activities implemented in accordance with the OPEP (per Table 11-14).</p>	<p>PS 9.6 In the event of a spill, emergency response activities implemented in accordance with the OPEP (per Table 11-14).</p>	<p>MC 9.6.1 Completed incident documentation.</p>

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<p>C 9.7 Arrangements supporting the activities in the OPEP (per Table 11-15) will be tested to ensure the OPEP can be implemented as planned.</p>	<p>PS 9.7.1 Arrangements supporting the activities in the OPEP (per Table 11-15) will be tested to ensure the OPEP can be implemented as planned.</p>	<p>MC 9.7.1.1 Testing of arrangement records confirm that emergency response capability has been maintained.</p>
		<p>PS 9.7.2 Woodside's procedure demonstrates a minimum level of trained personnel, for core roles in the OPEP (per Table 11-12), are maintained.</p>	<p>MC 9.7.2.1 Emergency Management dashboard confirms that minimum level of personnel trained for core OPEP roles are available.</p>

8.3 Hydrocarbon Release – Loss of Well Containment

8.3.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Shut-in production wells	Subsea release of hydrocarbons from shut-in production wells	Temporary and localised reduction in water quality.	1	0.1	1	Type A Lower Order Risk	Tolerable

8.3.2 Source of Hazard

All wells in the Stybarrow field were shut-in during production cessation, with all subsea valves confirmed to be closed, except for the injection choke valve on the Stybarrow-9 Xmas tree which is seized in the open position. Xmas trees are configured with hydraulically operated fail-closed control valves. Flow base plugs were installed on all production and gas injection well trees. All wells and trees have effective barriers and associated controls in accordance with the accepted Stybarrow / Eskdale Well Operations Management Plan (WOMP) (STAIMS-PS-0005).

Failure of barriers within the Xmas trees and wells could result in the release of hydrocarbons from the shut-in production wells. This could occur due to damage to the Xmas trees or wellheads from external impacts or failure of barriers resulting in a flow path between the reservoir and the environment. These events are unlikely to occur. The suspension of the wells in the Stybarrow field was done with no intention to restart production. Multiple barriers preventing the flow of hydrocarbons were implemented, tested, and confirmed to be effective in accordance with the WOMP. Unlike suspended production wells that are intended to be restarted (e.g., when an FPSO is off station), the reservoirs produced by the wells in WA-32-L are depleted and provide relatively little pressure against the installed well barriers. Several production wells used gas lift; these wells have little potential to flow in the absence of gas supplied for gas lift following cessation of production. Water injection was used to enhance production from the Stybarrow wells and maintain reservoir pressure; the absence of water injection following production cessation reduces the likelihood of shut-in wells flowing.

A release of hydrocarbons from a production well due to external impacts is not considered credible. External impacts to Xmas trees and/or wellheads sufficient to breach the barriers within the tree would require very high energy (e.g., a dropped object weighing hundreds of tonnes). No activities by third-parties occur in the region. Trawling activity does not occur within the vicinity of the Stybarrow field, and a trawl vessel would not credibly have sufficient pull to damage a wellhead or Xmas tree resulting in barrier failure. Each well in the Stybarrow field is fitted with a surface controlled subsurface safety valve (SCSSV) inside the well below the Xmas trees. These valves require hydraulic pressure to remain open (hydraulic connection ceased during production cessation) and were confirmed to be closed on all wells during production cessation. Even with complete removal of a Xmas tree, the SCSSV would provide an effective barrier between the reservoir and the environment. On this basis, external damage is not a credible cause for a release of hydrocarbons from a shut-in production well.

Degradation of the components of barriers may credibly occur. Such degradation may result in a very constricted pathway between the reservoir and the environment. This would limit the rate at which hydrocarbons would flow. All valves closed during production cessation were tested and passed the relevant standards for acceptable leakage rates. Wells were bull-headed with preservation fluid during production cessation, which inhibits degradation of valves. All of the Stybarrow and Eskdale production wells are depleted. If barrier degradation were to create a pathway between the reservoir and the environment, it is unlikely that hydrocarbons would flow; if such flow were to occur, the worst-case credible scenario would be 10's of litres per day. This release could continue until the leak

was detected and mitigating actions taken. Woodside intend to permanently plug and abandon the wells starting in approximately Q3 2023.

A description of Stybarrow crude is provided in **Section 7.7.2.5**.

8.3.3 Environmental Impact Assessment

As described in the assessment of discharges from the H4 flowline (**Section 7.7**), Stybarrow crude is a heavy crude oil with a very low fraction of low molecular weight hydrocarbons, which are typically the most toxic water-accommodated hydrocarbon fraction. Given the small credible release volume, acute toxic effects to marine biota will be highly localised and are expected to be sub-lethal.

Once on the sea surface, the released hydrocarbon may weather and form small tar balls dispersed in the sea. Similar to the release of Stybarrow crude from the H4 flowline, formation of surface slicks above ecological impact thresholds will not occur as a result of a leaking shut-in well due to the small release volumes and the nature of the hydrocarbon.

Due to the low credible release volume, oil released from a shut-in well would not reach shorelines in sufficient quantities to cause impacts.

8.3.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 8-12**. This process was completed as outlined in **Section 6.2** 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 8-12: Loss of well containment - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Administrative			
Manage Stybarrow wells in accordance with the accepted Stybarrow / Eskdale WOMP (STAIMS-PS-0005). The WOMP details the barriers to be maintained and the associated performance standards to be met for shut-in wells.	Accept	Regulatory requirement. Includes a comprehensive approach to managing well integrity to prevent accidental releases.	PS 8.3.1
Increase frequency of shut-in well inspections.	Reject	Inspection of the wells requires mobilising a vessel with a work class ROV to the field, which has an associated cost. The integrity of the shut-in wells satisfies regulatory WOMP requirements, all wells were tested and subsequent inspections shown no evidence of leaks. The wells will be plugged and abandoned no later than 30 September 2024. The consequence of a leak due to barrier failure is negligible. The cost of implementing this control is grossly disproportionate to the environmental benefit.	-
In the event of a spill, emergency response	Reject	The nature and scale of a loss of well containment means that the released	-

Control Measure	Accept / Reject	Reason	Associated Performance Standards
activities implemented in accordance with the OPEP.		<p>hydrocarbons will not credibly be available for response strategies to act upon.</p> <p>The credible release volumes and rates are relatively small (10s of litres), which means there is little oil available for oil spill response strategies to act upon.</p> <p>The wells are at the seabed in deep water (approx. 800 m) and hence any released hydrocarbons will become dispersed as they rise through the water column before reaching the surface. Consequently, accumulations of hydrocarbons on the sea surface will not credibly be large or thick enough for surface-oriented response strategies (e.g., containment and recovery and dispersant application) to be effective.</p> <p>The control of implementing the control is grossly disproportionate to the environmental benefit.</p>	

8.3.4.1 ALARP Summary

The risk assessment and evaluation has identified a control (**Table 8-12**) that when implemented is considered to manage the risks of loss of well containment to ALARP. Woodside considers the control measure described above are appropriate to reduce the potential risks of a loss of well containment. An additional control measure was identified in **Table 8-14** 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.

8.3.5 Demonstration of Acceptability

Given the adopted controls, the loss of well containment risk will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated as presented in **Table 8-12**. The adopted control is considered good oil-field practice/industry best practice. No concerns or objections regarding loss of well containment risks have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (**Section 4.6.3**). The environmental risks meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The loss of well containment risk, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The loss of well containment risk will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The loss of well containment risk will not impact upon biodiversity or ecological integrity in the long-term.

During consultation, BYAC asked to be kept informed of activities given potential for coastline areas of migrating species to be impacted in the event of a spill. Woodside will continue to engage with BYAC as part of ongoing consultation.

During consultation, Malgana raised its views that there are flaws in spill modelling related to Shark Bay hydrodynamics. Woodside has provided further information to representatives of Malgana on spill modelling inputs and results. There is no predicted contact at Shark Bay for a worst-case MDO spill during activities subject of this EP. Malgana also asked questions regarding spill response arrangements, which were addressed during the meeting. No further objections or requests for information were raised.

During a meeting with Nanda, a number of questions related to oil spills were raised (e.g., has Woodside had a spill in the past, details of spill response measures particularly for shoreline impact, and whether Woodside's activities are resistant to cyclone events) which Woodside provided responses to and no further concerns or comments were raised.

During meetings with NAC, WAC and RRRKAC, a number of questions related to oil spills were raised (e.g. emergency preparedness, relevance of the EMBA to consultation, whether a diesel spill would only be on the surface, how long diesel stays in the environment, and how soon a spill is responded to) which Woodside provided responses to and no further concerns or comments were raised. Consultation related to hydrocarbon spills also occurred with DMIRS, DBCA, NCWHAC, DNP, DoT, CCG, Shire of Carnarvon. A summary of all consultation conducted for this EP is included in **Appendix F**.

Woodside considers the risk to be managed to an acceptable level.

8.3.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 8-13: Environmental performance outcomes, performance standards and measurement criteria for Atmospheric Emissions - interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 10 No release of hydrocarbons to the marine environment due to a loss of well containment during the petroleum activity.</p>	<p>C 10.1 Manage Stybarrow wells in accordance with the accepted Stybarrow / Eskdale WOMP (STAIMS-PS-0005). The WOMP details the barriers to be maintained and the associated performance standards to be met for shut-in wells.</p>	<p>PS 10.1 Well barriers maintained on all shut-in wells in accordance with the Stybarrow / Eskdale WOMP (STAIMS-PS-0005)</p>	<p>MC 10.1.1 Records demonstrate that well barriers on shut-in wells are maintained in accordance with the Stybarrow / Eskdale WOMP.</p>

8.4 Marine Fauna Interaction

8.4.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Interaction with marine fauna	Accidental collision between project vessel and marine fauna.	Potential lethal impact or injury to protected marine fauna species.	30	0.1	3	Type A Lower Order Risk	Tolerable

8.4.2 Source of Hazard

The physical presence and movements of the project vessels in and around the operational area for the duration of the infrastructure removal activities may present a potential hazard to slow-moving marine megafauna (cetaceans, marine turtles, or whale sharks). Project vessels will be stationary or moving at low speeds during the infrastructure removal activities; however, movements can result in collisions between the vessel (hull, propellers) and marine fauna, with potential impacts ranging from minor behavioural interferences (such as avoidance) to severe impacts such as injury and mortality through vessel strikes.

8.4.3 Environmental Impact Assessment

Vessel collisions have been known to contribute to the mortality of marine fauna that spend time at the surface (i.e., breathing and feeding), including resident and migrating turtles (Hazel et al., 2007) and migratory whales (Jensen and Silber, 2004; Laist et al., 2001). For cetaceans, whale sharks and turtles, the risk of lethal collision is a function of abundance of animals in the operational area, probability of a collision and the probability of that collision being fatal.

8.4.3.1 Cetaceans

The likelihood of vessel-whale collision being lethal is influenced by vessel speed. The risk of a collision causing mortality of the whale increases as the vessel speed increases (Jensen and Silber, 2004; Laist et al., 2001). Vanderlaan and Taggart (2007) found that the chance of lethal injury to a large whale as a result of a vessel strike declines from 80% at 15 knots to about 20% at 8.6 knots.

The project vessels will be either stationary or moving slowly (around four knots) in the operational area; hence, the chance of a vessel-whale collision resulting in lethal outcome within these waters is much reduced. Vanderlaan and Taggart (2007) estimated the risk is less than 10% at a speed of four knots. Vessel-whale collisions at this speed are uncommon and, based on reported data contained in the United States of America National Ocean and Atmospheric Administration database (Jensen and Silber, 2004), there are only two known instances of collisions when the vessel was travelling at less than six knots, both from whale-watching vessels that were deliberately placed among whales. Collisions between vessels and marine mammals occur more frequently in areas where high vessel traffic and important habitat coincide.

The reaction of whales to the approach of a vessel is quite variable. Some species remain motionless when in the vicinity of a vessel, while others are known to be curious and often approach vessels that have stopped or are slow-moving, although they generally do not approach, and sometimes avoid, faster moving vessels (Richardson et al., 1995). Species may also show avoidance to vessel noise as the vessel approaches (**Section 7.3**).

Five listed threatened and migratory species of cetacean were identified as potentially occurring in or having habitat in the operational area: the sei whale, blue whale, fin whale, southern right whale and humpback whale. The operational area intercepts a two BIAs: humpback whale (foraging) and pygmy blue whale (distribution and

migration) (**Section 4.6.2**). The worst-case consequence from a vessel strike would be the fatality of a single EPBC Act-listed individual species; however, as they would represent an individual within the local population, it is not expected to result in a decreased population size.

8.4.3.2 Sharks and Rays

Shark and ray species, with the exception of whale sharks, spend minimal amount of time at the sea surface and collisions with individual sharks or rays is considered unlikely.

Whale sharks are at risk from vessel strikes as they spend time feeding at the sea surface. Whale sharks have been shown to spend approximately 25% of their time less than 2 m from the surface and greater than 40% in the upper 15 m of the water column (Gleiss et al., 2013; Wilson et al., 2006). Whale sharks may traverse offshore North West Shelf waters, including the operational area, during their migrations to and from aggregation areas along the Ningaloo coast. Seasonal aggregations along the Ningaloo coast can be variable, although usually between March and July, with peak numbers recorded in April and May (Sleeman et al., 2010). Outside of this period, individuals may still be present. Given the slow speeds at which project vessels operate, collisions with individual whale sharks are considered unlikely.

8.4.3.3 Turtles

Marine turtles are at potential risk from vessel collision. There is limited data about the incidence of marine turtle vessel strikes. Hazel and Gyuris (2006) note that at least 65 turtles were killed annually from 1999 to 2002 as a result of collisions with vessels on the Queensland east coast. Green turtles, followed by loggerhead turtles, comprised the majority of vessel-related records (Hazel and Gyuris, 2006); however, all species of marine turtle have been involved in vessel strikes (Commonwealth of Australia, 2017). It is reasonable to assume the higher the speed of collision, the greater the risk of mortality, but contact with the propeller would be lethal at almost all speeds. Studies have shown turtles are less likely to flee from a fast-moving vessel, presumably because of poor hearing and visual senses than from a slow-moving vessel (Hazel et al., 2007).

Marine turtles are predominantly oceanic species, except in the nesting season when they come ashore. Six marine turtle species were identified as potentially occurring in the operational area (**Table 4-6**). The operational area does not contain any BIAs for turtles. The nearest marine turtle nesting sites occur on the North West Cape, which is approximately 39 km from the infrastructure removal activities. Marine turtles are not expected to be in the operational area in high numbers during the infrastructure removal activities, even during nesting and inter-nesting periods, given the distance from the known nesting beaches. Given the slow speeds at which project vessels operate, collisions with individual marine turtles are considered unlikely.

8.4.3.4 Cumulative Impact Assessment

There is potential for SIMOPs to occur with activities covered under this EP and other Woodside decommissioning activities within WA-32-L as described in **Section 3.4.1**. A maximum of up to four vessels and a MODU may be present in the Operational Area at one time should SIMOPs occur. The increased number of vessels in WA-32-L during SIMOPs will not materially increase the risk of vessel collisions with marine fauna, as vessels performing SIMOPs will be either stationary or moving slowly, hence presenting very little risk of collision with marine fauna. The species at risk of collisions in WA-32-L are primarily pygmy blue whales and whale sharks, both of which are in the region seasonally and likely to avoid close interactions. Hence, the likelihood of vessel collisions with marine fauna during SIMOPs are considered highly unlikely, with a measurable but limited consequence.

8.4.3.5 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans for marine fauna that identify vessel collision as a threat (**Section 9**). This includes the objectives and actions within the following plans:

- Conservation management plan for the blue whale: A recovery plan under the *Environment Protection and Biodiversity Conservation Act 1999 2015-2025* (Commonwealth of Australia, 2015b)
- Conservation Advice *Balaenoptera borealis* sei whale (Threatened Species Scientific Committee, 2015b)
- Conservation Advice *Megaptera novaeangliae* humpback whale (Threatened Species Scientific Committee, 2015f)
- Conservation Advice *Balaenoptera physalus* fin whale (Threatened Species Scientific Committee, 2015c)

- Recovery plan for marine turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)
- Approved conservation advice for *Dermochelys coriacea* (Leatherback Turtle) (Threatened Species Scientific Committee, 2008b)

8.4.3.6 Cultural Values and Heritage

Through consultation and review of available literature (**Section 4.7.1**), Woodside understands that marine fauna that may be affected by a collision with a project vessel, such as marine mammals, whale sharks and turtles, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact turtle populations and their marine environment may have an indirect impact on some Indigenous communities if they deplete hunting areas and threaten local food security (Delisle et al. 2018:251). Whale species may be subject of First Nations’ increase ceremonies / rituals which are performed to enhance or maintain populations. As these thalu ceremonies are performed to maintain and increase populations of marine species, it is considered that management applies at the species/population level and not to individuals. For example the thalu site on Murujuga which “brings in whales to beach” will continue to serve its purpose so long as whales continue to migrate through Mermaid Sound.

Related intangible cultural heritage may include the transmission of cultural knowledge about whales and whale behaviour, including birthing areas, whale communication and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn 2021). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes results in reduced sightings (e.g., through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group’s intangible cultural heritage (UNESCO 2003).

As described in the environmental impact assessment (**Section 8.4.3**), potential impacts to marine fauna are predicted to be at an individual level, which are not considered to be ecologically significant at a population level. Impacts are not expected to occur to ecologically significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

8.4.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 8-14**. This process was completed as outlined in Section 6.2 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 8-14: Marine fauna interactions - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Legislation, Codes and Standards			
Reduce the likelihood of marine fauna being impacted by vessel noise and movements by ²⁴ : <ul style="list-style-type: none"> ▪ Observing the environment for large marine fauna when 	Accept	Implementation of controls for reduced vessel speed around cetaceans can potentially reduce the underwater noise footprint of a vessel and lower the likelihood of noise exposure above impact thresholds.	PS 3.1

²⁴For safety reasons, the distance requirements below are not applied for a vessel holding station or with limited manoeuvrability; e.g. anchor handling, loading, back-loading, bunkering, close standby cover for overside working and emergency situations.

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<p>vessels are moving in the operational area.</p> <ul style="list-style-type: none"> ▪ Maintaining separation from detected marine fauna. ▪ Reducing speed when in proximity to detected marine fauna. 		Controls based on legislative requirements and therefore must be adopted.	
Engineering			
Dedicated marine fauna observers (MFOs) to implement PS 3.1.	Reject	The environmental benefit of having dedicated MFOs is a potential increase in the likelihood of detecting marine fauna, which then permits actions to maintain separation with marine fauna. The vessel crew, in particular the bridge crew, will watch for marine mammals during the petroleum activity. The increase in the likelihood of detecting marine fauna by the addition of MFOs is negligible. The cost of implementing dedicated MFOs during vessel activities would be hundreds of thousands of dollars and expose additional personnel to the health and safety risks of working at sea. The cost is grossly disproportionate to the environmental benefit.	Not applicable
Passive acoustic monitoring to detect cetaceans in the vicinity of the vessels	Reject	The cost of a passive acoustic monitoring system has been estimated to be unacceptably high and would require several permanent mooring locations in the operational area with real-time monitoring and analysis. Given the project vessels would be stationary or moving slowly, it is considered the cost is disproportionate to the benefit that may be gained.	Not applicable
Separate			
Manage the timing of petroleum activity to avoid	Reject	Tagging and modelling studies of pygmy blue	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<p>sensitive periods (such as humpback whale migration, whale shark foraging). Note: Main humpback whale migration period (July to early October)</p>		<p>whales indicate this species migrates through continental slope waters near the Operational Area but does not show high residence times that may indicate dedicated foraging, breeding, or resting behaviours (Möller <i>et al.</i>, 2020, Thums <i>et al.</i>, 2022). Noise emissions from vessels using DP will not credibly result in PTS or TTS in blue or humpback whales, but may result in behavioural disturbance, such as avoidance. Studies on migrating humpback whales exposed to vessel noise indicated short-term changes in behaviour, such as decreasing dive time and movement speed, which recovered once whales moved away from the noise source (Dunlop <i>et al.</i>, 2015). The behavioural response did not prevent the migration behaviour, with Dunlop <i>et al.</i> (2015) concluding the presence of the vessel had little effect on the behaviour of migrating humpback whales. Migrating blue whales are expected to exhibit similar behavioural responses. Tagging studies (e.g., Double <i>et al.</i> 2014, Gales <i>et al.</i> 2009, Thums <i>et al.</i>, 2022,) of pygmy blue whales moving through the vicinity of the Operational Area show no apparent prevention of migration behaviour despite several persistent noise sources (e.g., FPSO operations, vessel activities etc.). Whale sharks tagged during their seasonal feeding aggregation off the Ningaloo Coast (March to June, Wilson <i>et al.</i>, 2006) moved widely, with no consistent usage of outer continental shelf waters or clear foraging behaviour</p>	

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>(Wilson et al., 2006). This evidence suggests that limited numbers of whale sharks will occur in the Operational Area, and the behaviour of these sharks is consistent with migration rather than foraging. Whale sharks are not particularly sensitive to underwater noise, and potential impacts from noise are limited to behavioural impacts in individual whale sharks that would not prevent biologically important behaviour.</p> <p>Avoiding periods of relatively high abundance of pygmy blue whales (June-July and November-December, Thums <i>et al.</i>, 2022), whale sharks (March to June, Wilson et al., 2006) and humpback whales (July to October, Jenner et al., 2001) would limit removal activities to between November and February.</p> <p>General Direction 833 requires that Woodside remove the equipment from the Stybarrow field by 31 March 2025. Limiting the timing of the vessel activities to avoid periods of increased presence of sensitive fauna increases the risk of not completing the removal activities within the time required by General Direction 833.</p> <p>Limiting the timing of the vessel activities would result in a relatively small environmental benefit, yet the cost of not complying with General Direction 833 is significant. It would also increase the likelihood of removal activities during cyclone season, increasing the likelihood of weather delays. Hence, the cost of implementing this control is grossly disproportionate to the environmental benefit.</p>	

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Administrative</i>			
Environmental awareness induction provided to all marine crew to advise marine fauna interaction requirements.	Accept	Providing induction to personnel assists in understanding obligations regarding marine fauna interactions. Control is feasible, standard practice with minimal cost.	PS 11.1

8.4.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 8-14**) that when implemented are considered to manage the risks of marine fauna interaction to ALARP. Woodside considers the control measures described above are appropriate to reduce the potential risks of marine fauna interaction. Additional reasonable control measures were identified in **Table 8-14** 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.

8.4.5 Demonstration of Acceptability

Given the adopted controls, the marine fauna interaction risk will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in **Table 8-14**.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding marine fauna interaction risks have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (Section 9). The environmental risks meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The marine fauna interactions risk, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The marine fauna interactions risk will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The marine fauna interactions risk will not impact upon biodiversity or ecological integrity in the long-term.

During consultation Yinggarda AC (YAC) expressed concern about potential impact to whales from collisions. Woodside responded to YAC during the meeting to clarify that controls would be in place to reduce this risk, and no further concerns were raised following this meeting (**Appendix F**). During consultation, Nanda asked about control measures to avoid impacts to migratory whales, which Woodside responded to in the meeting. WAC asked, during consultation, whether activities could be stopped during whale migration. Woodside responded that it is not planned and explained the controls to limit potential impacts to whales. During consultation, NTGAC raised an interest in whale sharks, and Woodside provided further information during the consultation meeting. During consultation, BYAC advised marine life migrating through the Yamatji Sea Connection Indigenous Protected Area (SCIPA) of Hutt River coastline to the Abrolhos Houtman Islands may be impacted by unplanned spills from the proposed activity. No further concerns were raised. Details of consultation are provided in **Appendix F**.

Further, marine species such as cetaceans, whale sharks and turtles have been identified, during consultation for this EP as well as for other Woodside activities, as a cultural value for Traditional Custodians. Given impacts on a population level are not expected to occur, cultural values and intangible cultural heritage associated with these species are expected to be maintained. Woodside considers the risk to be managed to an acceptable level.

8.4.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 8-15: Environmental performance outcomes, performance standards and measurement criteria for Marine Fauna Interactions - interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 11 No vessel strikes with protected marine fauna (whales, whale sharks, turtles) during the petroleum activity	C 3.1 EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans, including the following measures ²⁵ : <ul style="list-style-type: none"> ▪ vessels will not travel greater than six knots within 300 m of a cetacean or turtle (caution zone) and not approach closer than 100 m from a whale. ▪ vessels will not approach closer than 50 m for a dolphin or turtle and/or 100 m for a whale (with the exception of animals bow riding). ▪ if the cetacean or turtle shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than six knots. ▪ vessels will not travel greater than eight knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark. 	PS 3.1 Vessels will comply with the EPBC Regulations 2000 - Part 8 Division 8.1 (Regulation 8.05 and 8.06) Interacting with cetaceans to manage the risk of fauna collision.	MC 3.1.1 Records demonstrate no breaches with EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans and application of these regulations to whale sharks and marine turtles.
	C 11.1 Environmental awareness induction provided to all marine crew to advise marine fauna interaction requirements.		PS 11.1 Environmental awareness induction provided to project vessel marine crew before activities to advise marine fauna interaction requirements.
			MC 11.1.1 Signed environmental awareness induction attendance records demonstrate environmental briefing has been conducted for marine crew and includes marine fauna

²⁵For safety reasons, the distance requirements below are not applied for a vessel holding station or with limited manoeuvrability; e.g. anchor handling, loading, back-loading, bunkering, close standby cover for overside working and emergency situations.

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
			sightings and recording requirements

8.5 Introduction of Invasive Marine Species

8.5.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Invasive marine species	Movement of project vessels and immersible equipment from known high invasive marine species risk areas	Introduction of invasive marine species to areas, leading to impact to native species.	100	0.1	10	Type A Lower Order Risk	Tolerable

8.5.2 Source of Hazard

Project vessel activities have the potential to result in introduction of Invasive Marine Species (IMS) through:

- discharges of vessel ballast water containing foreign species
- translocation of species through biofouling of vessel hull or niches (such as sea chests, bilges or strainers)
- translocation of species on submerged equipment such as ROV.

The operational area is deep offshore in open waters, away from shorelines and critical habitat, therefore they are not conducive to the settlement and establishment of IMS. The most likely transfer of IMS is between project vessels within the operational area.

Should a project vessel be mobilised from international waters, there is the potential for transferring IMS from international waters into the operational area. There is a smaller risk of transferring IMS from vessels mobilised from Australian waters.

8.5.2.1 Ballast Water

DCCEEW is the lead agency with responsibility for managing ballast water. Vessels manage ballast water in accordance with IMO Ballast Water Management (BWM) Convention, IMO Guidelines, the mandatory Australian Ballast Water Management Requirements (Version 8) (DAWE 2020) are enforced under the *Biosecurity Act 2015* and associated local measures intended to minimise the risk of transplanting harmful aquatic organisms and pathogens from ships' ballast water and associated sediments, while maintaining ship safety. Contracted project vessels have individual BWM Plans.

Vessels arriving from overseas, intending to discharge trim or ballast water in coastal Australian waters, are required to have exchanged ballast water in accordance with DCCEEW requirements. The Australian Ballast Water Management Requirements are now aligned with the BWM Convention:

- All vessels must carry a valid Ballast Water Management Plan.
- Vessels with a BWM system should also carry a Type Approval Certificate specific to the type of BWM system.
- All vessels must submit a Ballast Water Report. Vessels intending to discharge ballast are obligated to report.
- International vessels can submit a Ballast Water Report through the Maritime Arrivals Reporting System at least 12 hours before arrival.

- All vessels must maintain a complete and accurate record of all ballast water movements.
- Domestic trading vessels can request a low-risk exemption through a Domestic Risk Assessment. All applications must be submitted through the Maritime Arrivals Reporting System.

From September 2019, all vessels that use ballast water are required to meet the Regulation D2 discharge standard of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (the Convention) at their next renewal survey. Vessels using ballast water exchange as their primary ballast water management method are required to phase out this management method and meet the Regulation D2 discharge standard. Vessels may meet this standard by installing an IMO Type Approved ballast water management system, or as specified within the Convention.

8.5.2.2 Biofouling

Biofouling on vessel hulls, external niche areas and immersible equipment pose a potential risk of IMS in Australian waters. Under the National Biofouling Management Guidelines for the Petroleum Production and Exploration Industry and IMO Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (resolution MEPC.207(62), DCCEEW guidelines and Woodside PetDW IMS Management Procedure, a risk assessment approach is applied to manage biofouling.

The Woodside PetDW IMS Management Procedure outlines:

- Regulatory Framework for managing IMS
- Woodside's marine activities at risk of facilitating introduction or translocation of IMS into Western Australia and Commonwealth waters
- Woodside and contractors' roles and responsibilities
- management and mitigation measures to prevent IMS incursions and manage identified biofouling prehire and post-mobilisation:
 - All contracted vessels are required to complete the Woodside IMS risk assessment process described in this procedure. The IMS risk assessment assigns a final risk category of low, moderate, uncertain or high to vessels based on a range of information listed below. If a risk category of moderate, uncertain or high is scored, a range of management options are available, including inspections, cleaning or treatment of internal seawater systems to bring the risk category to low.
 - All documentation must be provided to Woodside during the Marine Management Process before hire.
 - Any vessel contracted for greater than 12 months will be audited annually.
- the Woodside IMS Risk Assessment and Approval Procedure form for assessing vessel and immersible equipment for IMS risk, is in alignment with *Reducing Marine Pest Biosecurity Risks through Good Practice Biofouling Management* (NOPSEMA, 2020b). The Woodside IMS Risk Assessment and Approval Procedure form considers the:
 - history of the vessel, including destination and time spent in the last port of call
 - equipment deployment and cleaning history
 - status of anti-fouling coating and marine growth protection system
 - independent biofouling inspection results and timing
 - ballast water management, including water exchange and origin.

The completed IMS risk assessment must show that IMS risk is low for each project vessel and associated immersible equipment, prior to entering the operational area.

8.5.3 Environmental Impact Assessment

Non-endemic marine species transported into areas where they have not previously been found can displace native species or interfere with ecosystem processes in other ways (such as through predation). IMS may also be economically damaging, including direct damage to assets (fouling of vessel hulls and infrastructure), depletion of commercial marine species, and damage to recreational values of the area (such as tourism and recreational

fishing). Furthermore, once introduced to an area, eradication, or control of invasive species may be difficult, expensive and disruptive or damaging to other marine life.

The present knowledge base is inadequate to produce a detailed character profile of all marine organisms that may be translocated by shipping beyond their natural range. Ruiz et al. (2000) have analysed the common factors influencing success of translocated marine pests. Most marine pest species appear to have planktotrophic larvae; however, oviparous species are included. Many of them are epibenthic fouling species but some are soft substratum burrowers or planktonic.

The successful establishment of translocated marine pests via either ballast or hull fouling depends primarily on:

- colonisation and establishment of the marine pest on a vector (vessel, equipment or structure) in a donor region (for example, a home port, harbour or coastal project site where a marine pest is established)
- survival of the marine pests on the vector during the voyage from the donor to the recipient region
- colonisation (for example, by reproduction or dislodgement) of the recipient region by the marine pest, followed by successful establishment of a viable new local population.

The deep offshore open waters (approximately 810-850 m) of the operational area are not conducive to the settlement and establishment of IMS. The operational area water depths preclude light penetration to the seabed and the operational area is distant from any coastline (> 39 km) and critical shoreline habitats. The likelihood that any marine organisms could become established at the field is unlikely.

8.5.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 8-16**. This process was completed as outlined in **Section 6.2** 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 8-16: Introduction of Invasive Marine Species - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Mandatory dry-dock cleaning of vessels and cleaning of immersible equipment before entry to the operational area to reduce risk of IMS introduction.	Reject	Substantial costs and would affect schedule, resulting in potential delays. Significant cost deemed grossly disproportionate to very low risk, given controls already in place.	Not applicable
Substitute			
Source project vessels based in Australia only.	Reject	Sourcing vessels from Australian waters may result in a slight reduction in the likelihood of introducing IMS to the operational area; however, it does not completely eliminate the risk of IMS introduction. The potential cost of implementing this control could be high, given the potential supply issues associated with only locally-sourcing project vessels.	Not applicable
Engineering			
No ballast water exchange	Reject	Ballast water exchange is critical for maintaining vessel stability.	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Administrate			
Project vessels will manage their ballast water using one of the approved ballast water management options, as specified in the Australian Ballast Water Management Requirements.	Accept	Controls based on legislative requirements under the <i>Biosecurity Act 2015</i> must be accepted. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 12.1
Project vessels will manage their biosecurity risk associated with biofouling as specified in the Australian Biofouling Management Requirements.	Accept	Reduces the likelihood of transfer of marine pests between vessels within the operational area. No change in consequence would occur. Controls based on legislative requirements under the <i>Biosecurity Act 2015</i> – must be adopted.	PS 12.2
Woodside’s IMS risk assessment process (Section 11.3) will be applied to the project vessels and immersible equipment undertaking the petroleum activity that enter the operational area. Based on the outcomes, management options commensurate with the risk will be implemented to minimise the likelihood of IMS being introduced.	Accept	Risk assessment process includes an initial risk screening and the application of appropriate controls measures to be implemented. In doing so, the likelihood of transferring marine pests between the project vessels, and immersible equipment within operational area is reduced. No change in consequence would occur. Control is feasible and can be implemented at minimal cost. Control is considered good practice and implemented across all of Woodside’s operations. Benefits outweigh any cost sacrifice.	PS 12.3.1 PS 12.3.2

8.5.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 8-16**) that when implemented are considered to manage the potential risks of introduced IMS to ALARP. Woodside considers the control measures described above are appropriate to reduce the risks of introduced IMS. Additional reasonable control measures were identified in **Table 8-16** 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.

8.5.5 Demonstration of Acceptability

Given the adopted controls, the introduced IMS risk will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in **Table 8-16**.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding introduced IMS risks have been raised by relevant stakeholders. The environmental risks meet the Woodside environmental risk acceptability criteria (**Section 9**). The environmental risks meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning

strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.

- Precautionary principle: The introduction of IMS risk, and its potential impacts, are well understood. While the impacts of the introduction of IMS are uncertain, the risk of IMS introduction is ALARP because of the controls that will be implemented and the unsuitable environment in the operational area (i.e., deep water unsuited for IMS survival).
- Inter-generational principle: The introduction of IMS risk will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: While the impacts of the introduction of IMS are uncertain, the risk of IMS introduction is ALARP because of the controls that will be implemented and the unsuitable environment in the operational area (i.e., deep water unsuited for IMS survival). The introduction of IMS risk will not impact upon biodiversity or ecological integrity in the long-term.

Woodside considers the risk to be managed to an acceptable level.

8.5.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 8-17: Environmental performance outcomes, performance standards and measurement criteria for Atmospheric Emissions - interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 12 No introduction and establishment of invasive marine species into the operational area as a result of the petroleum activity	C 12.1 Project vessels will manage their ballast water using one of the approved ballast water management options, as specified in the Australian Ballast Water Management Requirements.	PS 12.1 Project vessels (including foreign vessels not party to the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004 to manage ballast water using an approved ballast water management option as specified in the Australian Ballast Water Management Requirements.	MC 12.1.1 Ballast Water Records System maintained by vessels which verifies compliance against Australian Ballast Water Management Requirements.
	C 12.2 Project vessels will manage their biosecurity risk associated with biofouling as specified in the Australian Biofouling Management Requirements.	PS 12.2 Compliance with Australian Biofouling Management Requirements.	MC 12.2.1 Records of implementation of biofouling management measure and pre-arrival reporting.
	C 12.3 Woodside's IMS risk assessment process (Section 11.3) will be applied to the project vessels and immersible equipment undertaking the petroleum activity that enter the operational area. Based on the outcomes, management options commensurate with the risk will be implemented to minimise the likelihood of IMS being introduced.	PS 12.3.1 Prior to entering the operational area, project vessels and relevant immersible equipment are determined to be low risk ²⁶ of introducing IMS of concern and maintain this low-risk status during the petroleum activity.	MC 12.3.1.1 Records of IMS risk assessments maintained for the project vessels and relevant immersible equipment entering the Operational to undertake the petroleum activity.
		PS 12.3.2 In accordance with Woodside's IMS risk assessment process (Section 11.3), the IMS risk assessments will be undertaken by an authorised environment adviser who has completed relevant Woodside IMS training	MC 12.3.2.1 Records confirm that the IMS risk assessments undertaken by an Environment Adviser or IMS inspector (as relevant).

²⁶ Low risk of introducing IMS of concern is defined as either no additional management measures required or, management measures have been applied to reduce the risk.

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
		or by qualified and experienced IMS inspector.	

8.6 Minor Spills of Chemicals and Hydraulic Fluid

8.6.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Minor spills and leaks of chemicals and hydraulic fluid	Minor spills and leaks of chemicals and hydrocarbons on the vessel deck reaching the marine environment and from subsea equipment (such as ROVs).	Localised and temporary reduction in water quality adjacent to the discharge and minor adverse toxicity effects to surface and water column biota.	10	0.3	3	Type A Lower Order Risk	Tolerable

8.6.2 Source of Hazard

During the petroleum activity, the handling, use and storage of chemicals and hydrocarbons on the project vessels will be required, which may include:

- fuel and refined oil
- hydraulic fluids and oils
- greases and lube oils
- cleaning and cooling agents

Spills and leaks of chemicals and hydraulic fluid on the decks of the project vessels could occur because of spillage during handling, inadequate bunding and storage, inadequate method of securing or tank and pipework failure, leaks from equipment or rupture or failure of hoses. Chemical storage areas are typically set up with effective primary and secondary bunding to contain any deck spills; however, hydraulic hoses may be located outside of bunded or deck areas. Typically, volumes of spills and leaks on vessels are small (less than 20 L).

Leaks or rupture of ROV hydraulic hoses may occur through equipment malfunction or line pinches, which would lead to the loss of small volumes of hydraulic fluids directly to the marine environment. Accidental release of hydraulic fluids volumes from ROV failure are expected to be low (less than 20 L).

8.6.3 Environmental Impact Assessment

Given the minor quantities involved (less than 20 L), the accidental discharge of chemicals and hydraulics has the potential to result in a localised reduction in water quality and a minor potential for toxicity impacts to plankton and fish populations (surface and water column biota). Large, more mobile fauna are likely to be transient within the operational area and toxic impacts are unlikely to occur to these species. The potential impacts would most likely be highly localised and restricted to the immediate area in the footprint of the release.

Hydraulic oils behave similarly to marine diesel when spilled to the marine environment. These are medium oils of light to moderate viscosity. They have a relatively rapid spreading rate and will dissipate quickly in ocean

conditions. Any impact is temporary and minor. Impact will decrease rapidly as the release dilutes and disperses in the marine environment. No impacts are predicted to benthic habitat communities in the operational area.

8.6.3.1 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans for marine fauna that identify marine pollution as a threat (**Section 9**).

8.6.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 8-18**. This process was completed as outlined in **Section 6.2** 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 8-18: Minor spills of chemicals and hydraulic fluid - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Engineering			
Where there is potential for loss of primary containment of oil and chemicals on the project vessel, deck drainage must be collected via a closed drainage system.	Accept	Reduces the likelihood of contaminated deck drainage water being discharged to the marine environment. No change in consequence would occur. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 5.4
Project vessels have self-containing hydraulic oil drip tray management system.	Accept	Requirements for self-containing hydraulic oil drip tray management system would reduce the likelihood of contaminants being discharged to the marine environment. No change in consequence would occur. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 13.1
Below-deck storage of all hydrocarbons and chemicals.	Reject	Reduces the likelihood of contaminated deck drainage water being discharged to the marine environment. Below deck storage may require more frequent handling of chemicals and hydrocarbons (e.g., transferring from below deck storage to above deck for use). Operational experience indicates minor spills of chemicals and hydrocarbons occur more frequently during handling operations. The control may reduce the consequence of a chemical or hydrocarbon spill but may also increase the likelihood of a spill occurring. There is no net environmental benefit from this control, hence it is rejected.	Not applicable
A reduction in the volumes of chemicals and hydrocarbons stored onboard the vessel.	Reject	Potentially reduces the volume of a deck spill from entering the marine environment. However, it may increase the frequency at which chemicals and	Not applicable

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>hydrocarbons are handled (e.g., more frequent provisioning). More frequent handling of chemicals and hydrocarbons may increase the likelihood of a spill occurring, as operational experience shows such spills occur more frequently during handling operations.</p> <p>The control may reduce the consequence of a chemical or hydrocarbon spill but may also increase the likelihood of a spill occurring. There is no net environmental benefit from this control, hence it is rejected.</p>	
Separate			
Liquid chemical and fuel storage areas are bunded or secondarily contained when they are not being handled/moved temporarily.	Accept	<p>Implementation of procedures for chemical storage and handling on the project vessels will reduce the consequence of impacts resulting from unplanned discharges to the marine environment by ensuring chemicals have been assessed for environmental acceptability.</p> <p>The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 13.2
Administrate			
Marine Order 91 (marine pollution prevention – oil) 2014, requires Ship Oil Pollution Emergency Plan (SOPEP)/Spill Monitoring Programme Execution Plan (SMPEP) (as appropriate to vessel class).	Accept	<p>By ensuring a SOPEP/SMPEP is in place for the vessel, the likelihood of a spill entering the marine environment is reduced. Although no significant reduction in consequence could result, the overall risk is reduced. Control is based on a legislative requirement and must be adopted.</p> <p>The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 9.1
Fluids and additives intended or likely to be discharged to the marine environment will have an environmental assessment completed before use.	Accept	<p>Reduces the consequence of impacts resulting from discharges to the marine environment by ensuring chemicals have been assessed for environmental acceptability (refer to Section 3.10). Planned discharges are required for safely executing activities; therefore, no reduction in likelihood can occur.</p> <p>The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 6.2
Critical hoses outside bunded areas (such as ROVs) are inspected and	Accept	Maintenance and inspection completed as scheduled on PMS reduces the risk of leaks to the marine environment. Control	PS 13.3

Control Measure	Accept / Reject	Reason	Associated Performance Standards
maintained as part of PMS.		is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	
Spill kits positioned in high-risk locations around the vessel (near potential spill points such as transfer stations).	Accept	Spill kits would reduce the likelihood of a deck spill from entering the marine environment. The consequence is unchanged. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 13.4

8.6.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 8-18**) that when implemented are considered to manage the potential risks of minor spills and leaks of chemicals and hydraulic fluids to ALARP. Woodside considers the control measures described above are appropriate to reduce the risks of minor spills / leaks of chemicals and hydraulic fluids. Additional reasonable control measures were identified in Table 8-18 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.

8.6.5 Demonstration of Acceptability

Given the adopted controls, the risk of minor spills and leaks of chemicals and hydraulic fluids will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in **Table 8-18**. The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the risk of minor spills and leaks of chemicals and hydraulic fluids have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (**Section 9**). The environmental risks meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The minor spills of chemicals and hydraulic fluids risk, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The minor spills of chemicals and hydraulic fluids aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The minor spills of chemicals and hydraulic fluids aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the risk to be managed to an acceptable level.

8.6.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 8-19: Environmental performance outcomes, performance standards and measurement criteria for minor spills of chemicals and hydraulic fluid

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 13 No unplanned release of hazardous chemicals or hydrocarbon to the marine environment greater than a Severity Level 2 ²⁷ during the petroleum activity.	C 9.1 (refer to Section 8.2.8)	PS 9.1 (refer to Section 8.2.8)	MC 9.1.1 (refer to Section 8.2.8)
	C 5.4 (refer to Section 7.5.6)	PS 5.4 (refer to Section 7.5.6)	MC 5.4.1 (refer to Section 7.5.6)
	C 13.1 Project vessels have self-containing hydraulic oil drip tray management system.	PS 13.1 Project vessels have self-containing hydraulic oil drip tray management system to contain any on-deck spills of hydraulic oil.	MC 13.1.1 Records demonstrate project installation vessel is equipped with self-containing hydraulic oil drip tray management system.
	C 13.2 Liquid chemical and fuel storage areas are banded or secondarily contained when they are not being handled/moved temporarily.	PS 13.2 Failure of primary containment in storage areas does not result in loss to the marine environment.	MC 13.2.1 Records confirms all liquid chemicals and fuel are stored in banded/secondarily contained areas when not being handled/moved temporarily.
	C 6.2 (refer to Section 7.6.6)	PS 6.2 (refer to Section 7.6.6)	MC 6.2.1 (refer to Section 7.6.6)
	C 13.3 Critical hoses outside banded areas (such as ROVs) are inspected and maintained as part of PMS.	PS 13.3 Critical hoses outside banded areas (such as ROVs) are identified and regularly inspected, maintained, and replaced as part of the PMS.	MC 13.3.1 Records in the PMS demonstrate inspections of critical hoses comply with equipment specifications.
	C 13.4 Spill kits positioned in high-risk locations around the vessel (near potential spill points such as transfer stations).	PS 13.4 Spill kits to be available for use to clean up deck spills.	MC 13.4.1 Records confirms that spill kits are present, maintained, and suitably stocked.

²⁷ Defined as 'Measurable but limited impact (< 1 year) on marine environment, limited community impact (< 1 month)'

8.7 Loss of Solid Hazardous and Non-hazardous Wastes (including Dropped Objects)

8.7.1 Summary of Risk Assessment and Evaluation

Aspect	Source of Hazard	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Loss of solid hazardous and non-hazardous wastes	Loss of waste (hazardous and non-hazardous) generated during vessel activities.	Localised decline in water quality, toxic effects to marine fauna and potential injury to fauna.	10	0.3	3	Type A Low Order Impact	Tolerable
	Loss of recovered subsea infrastructure.	Localised decline in water quality, toxic effects to marine fauna and potential injury to fauna. Disturbance of seabed habitat and associated communities.	10	0.3	3	Type A Low Order Impact	Tolerable

8.7.2 Source of Hazard

8.7.2.1 Solid Wastes

Project vessels produce a variety of solid wastes, including domestic and industrial wastes. These include aluminium cans, bottles, paper and cardboard, scrap steel, chemical containers, batteries and medical wastes.

Waste is segregated on-board the project vessels and stored in designated skips and waste containers, in accordance with the on-board waste management plan. Wastes are segregated into the categories of:

- non-hazardous waste (or general waste)
- hazardous waste
- recyclables (further segregation is conducted in line with practices at existing Woodside operations in the region).

There is the potential for solid wastes to be lost overboard to the marine environment, particularly during adverse weather events and back loading activities and due to incorrect waste storage. Waste items lost overboard are typically small wind-blown items such as plastic containers and cardboard.

8.7.2.2 Dropped Objects

There is the potential for objects to be dropped overboard from the project vessels to the marine environment. Small items dropped may include personal protective gear (such as glasses, gloves, hard hats) and small tools (such as spanners). During the recovery of subsea equipment there is the potential for larger dropped objects to occur (such as subsea infrastructure) as a result of human error or failure of lifting equipment during the recovery of subsea infrastructure. Size of the subsea infrastructure is provided in **Table 3-5**.

Woodside considers this a very unlikely event given the lifting methods and the nature and condition of the equipment. The DTM buoy is the heaviest single object that will be recovered from the Stybarrow field. The method that will be used to recover this item (a steel frame) only rely on the integrity of lifting points on the DTM buoy to

load the buoy into the chain basket or lifting frame. This lift will only raise the DTM a few metres above the seabed. Once secure in the basket or lifting frame, the weight of the DTM buoy will be lifted using engineered and tested lifting equipment. All lifting activities will be done in accordance with industry-standard lifting practices, such as load ratings on all lifting gear, limits on metocean conditions etc. The crane capacity of the heavy lift vessel that will recover the DTM buoy substantially exceeds the load capacity required to recover the DTM. The lifting method for the DTM buoy does not rely on the integrity of the buoy, hence mechanical failure of lifting points on the buoy is not credible.

Lifting of discrete seabed equipment such as Xmas trees, SDUs and UTAs is intended to be done using the original lifting points by which these items were installed. The lifting of the flowlines and risers (excluding the H4 flowline which will be cut into sections) will be done by lifting one end to the surface and recovering the flowline or riser as a continuous string. The forces applied to the flowlines and risers will not exceed their tensile strength, which is very high. As outlined in **Section 3.5**, all equipment is within its design life and in sound condition, with cathodic protection systems functioning effectively.

All equipment recovered from the field will be held just above the seabed to test the lifting arrangements are sound. If a lift was to fail, it is most likely to occur during this test, which substantially reduces the consequence of a failure of the lifting equipment due to the very short fall. A failure during a test lift will result in the object falling on its original location, with no net increase in the area of disturbed seabed. If subsea infrastructure is dropped during the recovery activities, Woodside will endeavour to locate and recover the lost equipment.

8.7.3 Environmental Impact Assessment

The potential impacts of solid wastes accidentally discharged to the marine environment include pollution and contamination of the marine environment. Marine fauna may interact with the lost waste, resulting in entanglement or ingestion, leading to injury and death of individual animals. Migratory and threatened species may transit through the operational area, including cetaceans, seabirds, marine turtles and whale sharks. Loss of solid waste to the marine environment is highly unlikely to have a significant environmental impact to marine fauna, based on the types and frequency of wastes that could be lost and the transient nature of the marine fauna. Impacts are anticipated to be temporary and minor.

In the unlikely event of loss of subsea infrastructure to the marine environment, potential impacts would be limited to localised physical impacts on benthic communities over the footprint of the lost subsea infrastructure. The subsea infrastructure would subsequently be recovered if possible. Impacts will also be temporary in nature. Physical impacts from dropped infrastructure are anticipated to be localised and minor and be associated with sediment burrowing infauna and surface epifauna invertebrates, particularly filter feeders, inhabiting the seabed directly over the infrastructure footprint. Any elevated turbidity would be very localised and temporary and is therefore not expected to have any significant impact to environment receptors, such as filter feeders.

The operational area overlaps the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF, therefore, seabed disturbance from dropped objects may directly disturb a very small, localised area of the KEF. No lasting effects are anticipated.

8.7.3.1 Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans advice for marine fauna that identify marine debris as a threat (**Section 9**). This includes the objectives and actions within the *Recovery Plan for Marine Turtles in Australia 2017–2027* (Commonwealth of Australia, 2017) and *Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans* (Commonwealth of Australia, 2018), which relate to marine debris.

8.7.4 Demonstration of As Low As Reasonably Practicable

The ALARP process for the environmental aspect is summarised in **Table 8-20**. This process was completed as outlined in **Section 6.2** 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 8-20: Loss of solid hazardous and non-hazardous wastes - as low as reasonably practicable summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Administrative			
Marine Order 95 – Pollution prevention – Garbage (as appropriate to vessel class) which requires putrescible waste and food scraps are passed through a macerator so that it is capable of passing through a screen with no opening wider than 25 mm.	Accept	Controls based on legislative requirements must be accepted. Reduces probability of garbage being discharged to sea. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 5.2
Project vessel waste arrangements, which require: <ul style="list-style-type: none"> dedicated waste segregation bins records of all waste to be disposed, treated, or recycled waste streams to be handled and managed according to their hazard and recyclability class. 	Accept	Control reduces the likelihood of an unplanned release of solid hazardous or non-hazardous waste to the marine environment. The consequence remains unchanged. Control is considered standard practice and can be implemented at minimal cost. Environmental benefit outweighs cost sacrifice.	PS 14.1
Project vessels' work procedures implemented for lifts, bulk transfers and cargo loading, which require: <ul style="list-style-type: none"> Security of loads shall be checked before commencing lifts. Loads shall be covered if there is a risk of loss of loose materials. Lifting operations shall be conducted using the PTW and JSA systems to manage the specific risks of that lift, including consideration of weather and sea state. 	Accept	Reduces the likelihood of an unplanned release. Lifting, bulk transfer and cargo loading procedures will ensure lifts are performed in a safe manner and reduce likelihood of a dropped object event. Control is considered standard practice and can be implemented at minimal cost. Environmental benefit outweighs cost sacrifice.	PS 14.2
Project vessel inductions include control measures and training for crew in dropped object prevention.	Accept	By ensuring crew are appropriately trained in dropped object prevention, the likelihood of a dropped object event is reduced. Control is considered standard practice and can be implemented at minimal cost. Environmental benefit outweighs cost sacrifice.	PS 14.3

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<p>ROV, crane or support vessel may be used to attempt recovery of solid wastes or equipment lost overboard.</p> <p>Where safe and practicable for this activity will consider:</p> <ul style="list-style-type: none"> ▪ risk to personnel to retrieve object ▪ whether the location of the object is in recoverable water depths ▪ object's proximity to subsea infrastructure ▪ ability to recover the object (i.e., nature of object, lifting equipment or, ROV availability and suitable weather). <p>Any material dropped objects / waste that remain in the title will undergo an impact assessment and be added to the inventory.</p>	Accept	Potentially reduces consequence by recovering dropped object/waste from the marine environment.	<p>PS 14.4.1</p> <p>PS 14.4.2</p>

8.7.4.1 ALARP Summary

The risk assessment and evaluation has identified a range of controls (**Table 8-20**) that when implemented are considered to manage the potential risks loss of loss of solid hazardous and non-hazardous wastes (including dropped objects) to ALARP.

Woodside considers the control measures described above are appropriate to reduce the risks of loss of solid hazardous and non-hazardous wastes (including dropped objects). Additional reasonable control measures were identified in **Table 8-20** to further reduce impacts but were rejected since the associated cost or sacrifice was grossly disproportionate to any benefit. The impacts are therefore considered reduced to ALARP.

8.7.5 Demonstration of Acceptability

Given the adopted controls, the risk of loss of solid hazardous and non-hazardous wastes (including dropped objects) will be reduced to a tolerable level. Further opportunities to reduce the risk of loss of solid hazardous and non-hazardous wastes (including dropped objects) to the marine environment have been investigated in **Table 8-20**.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the loss of solid hazardous and non-hazardous wastes (including dropped objects) to the marine environment have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (**Section 9**). The environmental risks meet the Woodside environmental risk acceptability criteria (**Section 6.3**). The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Stybarrow field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.

- Precautionary principle: The loss of solid hazardous and non-hazardous waste event, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The loss of solid hazardous and non-hazardous waste event will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The loss of solid hazardous and non-hazardous waste event will not impact upon biodiversity or ecological integrity.

Woodside considers the risk to be managed to an acceptable level.

8.7.6 Environmental Performance Outcome, Performance Standards and Measurement Criteria

Table 8-21: Environmental performance outcomes, performance standards and measurement criteria for Atmospheric Emissions - interaction with other users

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 14 No unplanned releases of solid hazardous or non-hazardous waste or incidents of dropped objects to the marine environment greater than a Severity Level 1 ²⁸ during the petroleum activity.	C 5.2 (refer to Section 7.5.6)	PS 5.2 (refer to Section 7.5.6)	MC 5.2.1 (refer to Section 7.5.6)
	C 14.1 Project vessel waste arrangements, which require: <ul style="list-style-type: none"> ▪ dedicated waste segregation bins ▪ records of all waste to be disposed, treated, or recycled ▪ waste streams to be handled and managed according to their hazard and recyclability class. 	PS 14.1 Hazardous and non-hazardous waste managed in accordance with the project vessels' waste arrangements	MC 14.1.1 Records demonstrate compliance against project vessels' waste arrangements.
	C 14.2 Project vessels' work procedures implemented for lifts, bulk transfers and cargo loading, which require: <ul style="list-style-type: none"> ▪ Security of loads shall be checked before commencing lifts. ▪ Loads shall be covered if there is a risk of loss of loose materials. ▪ Lifting operations shall be conducted using the PTW and JSA systems to manage the specific risks of that lift, including consideration of weather and sea state. 	PS 14.2 All lifts conducted in accordance with applicable project vessels' work procedures to limit potential for dropped objects.	MC 14.2.1 Records show lifts conducted in accordance with the applicable project vessels' work procedures.

²⁸ Defined as 'Measurable but limited impact (< 1 year) on marine environment, limited community impact (< 1 month)'

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<p>C 14.3 Project vessel inductions include control measures and training for crew in dropped object prevention.</p>	<p>PS 14.3 Project vessels crews aware of requirements for dropped object prevention.</p>	<p>MC 14.3.1 Records show dropped object prevention training is provided to the project vessels.</p>
	<p>C 14.4 ROV, crane or support vessel may be used to attempt recovery of solid wastes or equipment lost overboard. Where safe and practicable for this activity will consider:</p> <ul style="list-style-type: none"> ▪ risk to personnel to retrieve object ▪ whether the location of the object is in recoverable water depths ▪ object's proximity to subsea infrastructure ▪ ability to recover the object (i.e., nature of object, lifting equipment or, ROV availability and suitable weather). <p>Any material dropped objects / waste that remain in the title will undergo an impact assessment and be added to the inventory.</p>	<p>PS 14.4.1 Any solid waste /equipment dropped to the marine environment will be recovered where safe and practicable to do so. Where retrieval is not practicable and / or safe, material items (property) that are lost to the marine environment will undergo an impact assessment and will be added to the inventory for the title.</p>	<p>MC 14.4.1 Records detail the recovery attempt consideration and status of any waste /equipment lost to marine environment.</p>
			<p>MC 14.4.2 Incident reporting records demonstrate outcomes of the safe and practicable evaluation, including an impact assessment for material items lost to the marine environment.</p>
<p>MC 14.4.3 Records demonstrate that material items left in title are added to the inventory.</p>			

9 Recovery Plan and Threat Abatement Plan Assessment

This section provides an assessment to demonstrate that the petroleum activity are not inconsistent with any relevant recovery plans or threat abatement plans.

Relevant recovery plans and threat abatement plans to the petroleum activity and the receiving environment are:

- *Recovery Plan for Marine Turtles in Australia 2017–2027* (Commonwealth of Australia, 2017)
- *Conservation management plan for the blue whale: A recovery plan under the Environment Protection and Biodiversity Conservation Act 1999 2015-2025* (Commonwealth of Australia, 2015b)
- *Conservation management plan for the southern right whale: a recovery plan under the Environment Protection and Biodiversity Conservation Act 1999 2011-2021* (Department of Sustainability, Environment, Water, Population and Communities, 2012)
- *Sawfish and River Shark Multispecies Recovery Plan* (Commonwealth of Australia, 2015a)
- *Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans* (Commonwealth of Australia, 2018b)
- *Whale Shark Management with Particular Reference to Ningaloo Marine Park* (Department of Parks and Wildlife, 2013)
- *National Recovery Plan for Threatened Albatrosses and Giant Petrels* (Department of Sustainability, Environment, Water, Population and Communities, 2011)
- *Recovery Plan for the Grey Nurse Shark (*Carcharias taurus*)* (Department of the Environment, 2014)
- *Recovery Plan for the White Shark (*Carcharodon carcharias*)* (Department of Sustainability, Environment, Water, Population and Communities, 2013)

Objectives and relevant actions from the above plans have been identified in **Table 9-1**. The table includes an assessment on whether the petroleum activity, including resulting impacts and risks identified in **Sections 7** and **8** are inconsistent with those objectives and actions.

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

Recovery / Threat Abatement Plan	Relevant Action Areas / Objectives	Assessment of Consistency
Recovery Plan for Marine Turtles in Australia 2017–2027	<p>Action Area A3: Reduce the impacts from marine debris:</p> <ul style="list-style-type: none"> ▪ Understand the threat posed to green turtle NWS stock by marine debris. ▪ Determine the extent to which marine debris is impacting Western Australian loggerhead turtles. 	<p>Not inconsistent</p> <p>Section 8.4 considers the impacts of unplanned releases of solid hazardous and non-hazardous wastes and considers the potential risks to marine turtles.</p> <p>Appropriate controls have been considered and adopted to reduce the risk of unplanned releases of solid hazardous and non-hazardous wastes to ALARP and acceptable levels</p>
	<p>Action Area A4: Minimise chemical and terrestrial discharge:</p> <ul style="list-style-type: none"> ▪ Ensure spill risk strategies and response programs adequately include management for marine turtles and their habitats, particularly in reference to 'slow to recover habitats', such as nesting habitat, seagrass meadows or coral reefs. 	<p>Not inconsistent</p> <p>Sections 7.5 and 7.7 address the impacts from routine discharges to marine turtles.</p> <p>Section 8.2 and 8.6 considers the risks from accidental release of chemicals and hydrocarbons to marine turtles. Spill risk strategies and response program include management measures for turtles and their nesting habitats.</p> <p>Appropriate controls have been considered and adopted to reduce the impacts and risks of planned and unplanned releases of chemicals to the marine environment to ALARP and acceptable levels.</p>
	<p>Action Area A8: Minimise light pollution:</p> <ul style="list-style-type: none"> ▪ Artificial light within or adjacent to habitat critical to the survival of marine turtles will be managed such that marine turtles are not displaced from these habitats. 	<p>Not inconsistent</p> <p>Section 7.2 considers the impacts from project vessel lighting on marine turtles.</p> <p>Given the operational area location, project vessel lighting is not anticipated to displace marine turtles from critical habitats. Light emissions may cause localised and temporary behavioural disturbance to transient individual marine turtles. The level of disturbance is not considered to result in displacement of adult turtles from critical habitat.</p> <p>Appropriate controls have been considered and adopted to reduce the impacts of light emissions to ALARP and acceptable levels.</p>

Recovery / Threat Abatement Plan	Relevant Action Areas / Objectives	Assessment of Consistency
<p>Conservation Management Plan for the Blue Whale 2015–2025</p>	<p>Action Area A.2: Assessing and addressing anthropogenic noise:</p> <ul style="list-style-type: none"> ▪ Assessing the effect of anthropogenic noise on blue whale behaviour 	<p>Not inconsistent</p> <p>Section 7.3 considers the potential impacts to pygmy blue whales. Noise generated by the petroleum activity is anticipated to result in localised, minor and temporary behavioural disturbance to individuals only.</p> <p>The operational area overlaps a pygmy blue whale distribution BIA. Controls have been evaluated (Section 7.3.4) as appropriate to be manage noise such that any blue whale continues to utilise the area without injury.</p> <p>Appropriate controls have been considered and adopted to reduce the impacts of noise emissions to ALARP and acceptable levels.</p>
	<p>Action Area A.3: Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury</p>	<p>Not inconsistent</p> <p>Section 7.3 considers the potential impacts to pygmy blue whales. Noise generated by the petroleum activity is anticipated to result in localised, minor, and temporary behavioural disturbance to individuals only.</p> <p>The operational area overlaps pygmy blue whale distribution and migration BIAs. Controls have been evaluated (Section 7.3.4) as appropriate to be manage noise such that any blue whale continues to utilise the area without injury.</p> <p>Appropriate controls have been considered and adopted to reduce the impacts of noise emissions to ALARP and acceptable levels.</p>
	<p>Action Area A.4: Minimising vessel collisions:</p> <ul style="list-style-type: none"> ▪ Ensure the risk of vessel strikes on blue whales is considered when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, appropriate mitigation measures are implemented. 	<p>Not inconsistent</p> <p>Section 8.4 considers the potential impacts to pygmy blue whales. Vessel collisions with pygmy blue whales are unlikely to occur, given the very slow vessel speeds within the confined operational area.</p> <p>Appropriate controls including adherence to EPBC Regulations 2000 – Part 8 Division 8.1 (Regulation 8.05 and 8.06) Interacting with cetaceans have been adopted to reduce the risks of marine fauna interactions to ALARP and acceptable levels.</p>

Recovery / Threat Abatement Plan	Relevant Action Areas / Objectives	Assessment of Consistency
	<p>Action Area B.3: Describing spatial and temporal distribution and defining biologically important habitat</p> <ul style="list-style-type: none"> ▪ Identify migratory pathways between breeding and feeding grounds. ▪ Assess timing and residency within BIAs. 	<p>Not inconsistent</p> <p>Appendix C presents details of the timing and residency of pygmy blue whales within BIAs. The section includes a review of literature to identify migratory pathways between breeding and feeding grounds.</p>
<p>Conservation management plan for the southern right whale: a recovery plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2011-2021</p>	<p>Threat A2: Assessing and addressing anthropogenic noise (shipping, industrial and seismic)</p>	<p>Not inconsistent</p> <p>Section 7.3 considers the potential impacts to southern right whales. Noise generated by the petroleum activity is anticipated to result in localised, minor, and temporary behavioural disturbance to individuals only.</p> <p>Appropriate controls have been considered and adopted to reduce the impacts of noise emissions to ALARP and acceptable levels.</p>
	<p>Threat A 5: Addressing vessel collisions</p>	<p>Not inconsistent</p> <p>Section 8.4 considers the potential impacts to southern right whales. Vessel collisions with southern right whales are unlikely to occur, given the very slow vessel speeds within the confined operational area and the distribution of the species.</p> <p>Appropriate controls including adherence to EPBC Regulations 2000 – Part 8 Division 8.1 (Regulation 8.05 and 8.06) Interacting with cetaceans have been adopted to reduce the risks of marine fauna interactions to ALARP and acceptable levels.</p>
<p>Sawfish and River Shark Multispecies Recovery Plan</p>	<p>Objective 5: Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species</p> <ul style="list-style-type: none"> ▪ Identify risks to important sawfish and river shark habitat and measures needed to reduce those risks. 	<p>Not inconsistent</p> <p>Section 7.6 considers the impact of seabed disturbance on sawfish and river shark species. Given the low level of seabed disturbance from the petroleum activity and the lack of suitable habitat for sawfish and river shark within the operational area, impacts are not anticipated.</p> <p>Sections 7.7 and 8.2 considers the impact of a hydrocarbon release on a variety of habitats, including sawfish and river shark habitat within the EMBA.</p>

Recovery / Threat Abatement Plan	Relevant Action Areas / Objectives	Assessment of Consistency
	<p>Objective 6: Reduce and, where possible, eliminate any adverse impacts of marine debris on sawfish and river shark species.</p>	<p>Appropriate controls have been considered and adopted to reduce the risk of unplanned hydrocarbon releases to ALARP and acceptable levels.</p> <p>Not inconsistent Section 8.7 considers the impacts of unplanned releases of solid hazardous and non-hazardous wastes and considers the potential risks to sawfish and river shark species. Appropriate controls have been considered and adopted to reduce the risk of unplanned releases of solid hazardous and non-hazardous wastes to ALARP and acceptable levels.</p>
<p>Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans</p>	<p>Objective 1: Contribute to long-term prevention of marine debris.</p> <ul style="list-style-type: none"> ▪ Limit the amount of single use plastic material lost to the environment in Australia. 	<p>Not inconsistent Section 8.7 considers the impacts of unplanned releases of solid hazardous and non-hazardous wastes and considers the potential risks to marine fauna. Appropriate controls have been considered and adopted to reduce the risk of unplanned releases of solid hazardous and non-hazardous wastes to ALARP and acceptable levels.</p>
<p>Whale Shark Management with Particular Reference to Ningaloo Marine Park</p>	<p>None. However, identifies boat strike as a risk to whale shark</p>	<p>Not inconsistent Section 8.3 considers the potential impacts to whale shark. Vessel collisions with whale shark are unlikely to occur, given the very slow vessel speeds within the confined operational area.</p>
<p>National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011 to 2016</p>	<p>Marine-based threats to the survival and breeding success of albatrosses and giant petrels foraging in waters under Australian jurisdiction are quantified and reduced</p>	<p>Not inconsistent Section 7.2 considers the impacts from project vessel lighting on seabirds. Any collision between the birds and project vessels as a result of the attraction are highly unlikely due to the lack of aggregation areas for birds over the operational area and slow-moving project vessels.</p>
<p>Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>)</p>	<p>Objective 7: Improve understanding of the threat of pollution and disease to the grey nurse shark</p>	<p>Not inconsistent Section 8.2 and 8.6 considers the risks from accidental release of chemicals and hydrocarbons to grey nurse shark.</p>

Recovery / Threat Abatement Plan	Relevant Action Areas / Objectives	Assessment of Consistency
		Appropriate controls have been considered and adopted to reduce the risk of unplanned hydrocarbon release to ALARP and acceptable levels.
Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>)	Objective 7: Continue to identify and protect habitat critical to the survival of the white shark and minimise the impact of threatening processes within these areas	<p>Not inconsistent</p> <p>Section 8.2 and 8.6 considers the risks from accidental release of chemicals and hydrocarbons to grey nurse shark.</p> <p>Appropriate controls have been considered and adopted to reduce the risk of unplanned hydrocarbon release to ALARP and acceptable levels.</p>

10 Hydrocarbon Spill Response

As required by the Environment Regulations, Woodside has prepared the Stybarrow Decommissioning and Field Management Oil Pollution Emergency Plan (OPEP) (refer **Appendix D**). The OPEP is the primary reference document and key control measure to be implemented in the event of an oil spill during the petroleum activities. It has been developed as a formal means of establishing the processes and procedures to ensure Woodside maintains a constant vigilance and readiness to prevent and, where required, respond to, and effectively manage oil spill incidents that may occur. The OPEP has been developed to comply with the Environment Regulations.

This section of the EP provides a description of the proposed oil spill response strategies based on the worst-case spill scenarios. The response strategies presented are based on the outcome of a Strategic Net Environmental Benefit Analysis (NEBA). For each of the proposed response strategies, their benefits and constraints are presented, along with an assessment of the associated risks and impacts that may occur from their implementation.

10.1 Spill Response Levels

To establish oil spill response arrangements that can be scaled up or down depending on the nature of the incident by integrating with other local, regional, national and industry plans and resources, Woodside uses a tiered response approach. The criteria for determining the hydrocarbon spill ‘Levels’ for the purpose of the spill response have been adopted from the *National Plan for Maritime Environmental Emergencies* (AMSA, 2020) and are described in **Table 10-1**. The ‘level-rating’ for oil spill response provides a magnitude description of the potential impact and the effort to support oil spill response.

The ‘Level’ is determined by the relevant Commander, such as the Emergency Response Team (ERT) Commander (i.e., the Vessel Master) or by the Incident Management Team (IMT) Incident Commander.

Typically, Level 1 spill responses can be resourced using shipboard or port located spill kits. Vessels are required to maintain a current SOPEP and appropriate spill kits, response capabilities and trained personnel. Likewise, designated ports and harbours are required to have at least Level 1 response capability on site.

For Level 2 and 3 spills, Woodside maintains a broad set of spill response capabilities. Woodside also has contracts and Memoranda of Understanding (MoUs) with national and international third-party spill response providers to ensure response capabilities can be engaged.

Table 10-1: Worst-case spill scenarios for the petroleum activities and incident classification used to inform spill response

Level	Level Definition	Stybarrow Decommissioning and Field Management Activities Spill Scenarios
Level 1	An incident will have minor or limited impacts on the environment which can be controlled by the resources normally available onsite without the need to mobilise Woodside IMT or other external resources.	
	An incident: <ul style="list-style-type: none"> ▪ occurs within a single jurisdiction ▪ with simple IAP required ▪ resourced from within one area ▪ where environment would be isolated and/or natural recovery expected within weeks ▪ wildlife impacts are limited to individual fauna ▪ that has no immediate concern of shoreline impact ▪ with a Woodside (PetDW) Risk Matrix Consequence Level 1-2. 	MDO spill from bunkering incident (37.5 m ³ MDO)

Level	Level Definition	Stybarrow Decommissioning and Field Management Activities Spill Scenarios
Level 2	An incident will have substantial impacts to the environment and cannot be controlled by the use of onsite resources alone and required external resources and support to combat the situation.	
	An incident: <ul style="list-style-type: none"> ▪ occurs across multiple jurisdictions ▪ with outline of the IAP required ▪ that requires intra-state resources ▪ with significant environmental impacts, recovery may take months, remediation required ▪ with wildlife impacts to groups of fauna or threatened fauna ▪ where shoreline impact is expected ▪ with a Woodside (PetDW) Risk Matrix Consequence Level 3+. 	MDO spill from vessel collision (1,000 m ³ MDO)
Level 3	An incident will have serious impacts to the environment and occurs across multiple/international jurisdictions and requires mobilisation of state, national or international resources and support to combat the situation.	
	An incident: <ul style="list-style-type: none"> ▪ occurs across multiple/international jurisdictions ▪ with detailed IAP required ▪ that requires national or international resources ▪ with significant environmental area impacted, recovery may take months, remediation required ▪ with wildlife impacts to large numbers of fauna ▪ with a Woodside (PetDW) Risk Matrix Consequence Level 4+. 	Not applicable

10.2 Source of Risk

This EP has identified the worst-case and credible hydrocarbon spill scenarios as:

- Level 1: 37.5 m³ bunkering incident (**Section 8.2**)
- Level 2: fuel tank rupture from a vessel collision, resulting in a surface release of 1,000 m³ MDO (**Section 8.2**).

10.3 Strategic Net Environmental Benefit Analysis of Response Options

In the oil spill response planning process, Woodside has adopted a comprehensive strategic NEBA methodology to select and justify the appropriate response strategy combinations for the credible and worst-case hydrocarbon spill scenario. A NEBA was conducted to select the potential oil spill response strategies in the event of a Level 2 MDO spill (**Table 10-2**). The focus of these NEBAs was to understand the consequences of ‘no action’ and to select an oil spill response strategy that delivered a net environmental benefit using the OPEP Priorities.

The NEBA methodology used is described as follows:

- LIST the response strategies available.
- IDENTIFY the benefit, environmental impact and operational challenge of each response strategy.
- EVALUATE the viability of each response strategy in a particular credible scenario.
- FILTER the result to identify all the viable strategies for a particular credible scenario.
- FORMULATE options of different strategy combinations.

- COMPARE these options and select the preferred option of strategy combination.

From these results, the priority application ZONE of each strategy was identified in the preferred strategy combination by selecting the:

- primary response strategy, which has been confirmed to be used and should be applied as soon as possible
- secondary response strategy, which will be only applied if needed and practical
- nil response strategy, which is a non-preferred option, will not be used and does not identify a net environmental benefit.

In the event of an oil spill, an Operational NEBA will be performed to select spill response options that have a net environmental benefit. It is likely spill response will involve a combination of response options and will evolve over time as conditions change.

Table 10-2: Strategic net environmental benefit analysis of response option for hydrocarbon spills

Spill Response Strategy	Overview of Environmental Benefits	Associated Environmental Risks/Impacts	Operational Constraints	Apply Response		Primary or Secondary Response	Justification Note
Source Control – Vessel Control	Limits or prevents further discharge of hydrocarbons to the marine environment by halting the spill (for example, transferring fuel to another tank).	No significant impacts.	Health and safety considerations may delay implementation under certain circumstances (such as vapours).	Level 2 – MDO	Yes	Primary	It is intended that control at the vessel will always be attempted as the immediate primary response to halt further spill to marine environment.
Monitor and Evaluate (including operational monitoring)	Constant monitoring and evaluation by surveillance is a mandatory strategy required for real-time decision-making during a spill event.	Risks/impacts from operations of monitoring vessels and aircraft (for example, emissions such as air, noise and liquid waste, marine fauna interaction, interference with other users).	Weather conditions may put constraints on visual observations (vessel and aerial). Vessel and aerial surveillance constrained to daylight hours. Stringent safety management requirements for aerial and marine operations. Potential coordination of multiple vessels/aircraft within limited area (simultaneous operations).	Level 2 – MDO	Yes	Primary	Surveillance activities ensure constant monitoring and evaluation of the spill.
Dispersant – Surface Application	Application of surface dispersant may reduce the volumes of hydrocarbons contacting sensitive surface receptors. Dispersant can also enhance biodegradation and may reduce VOCs in some circumstances therefore reducing potential health and safety risk to responders.	Dispersant can increase dispersed/entrained hydrocarbons which can potentially have higher toxicity to biota in shallow water than naturally dispersed hydrocarbons. Subsurface oil plume likely to increase in size resulting in greater spatial extent of entrained oil. Entrained oil could potentially impact on sensitive shallow-water receptors e.g., corals.	Not applicable for MDO spills due to rapid dispersion and spreading. Furthermore, spill modelling of the MDO scenario (RPS, 2022b) predicts no instances where the slick is >50 g/m ² (which is considered the minimum threshold for effective surface dispersant application). Chemical dispersant application is therefore not recommended as a beneficial option as the spill is not predicted to reach the minimum thickness for surface dispersants to be effective in increasing the dispersal rate of the spill. Applying dispersants to a thin slick is likely to result in dispersant droplets passing through the slick without binding to the hydrocarbon. This has the potential of introducing more chemicals into the marine environment.	Level 2 – MDO	No	-	Surface dispersant application is not recommended as a beneficial option for MDO, as it has a low additional benefit of increasing the dispersal rate of the spill while introducing more chemicals into the marine environment.
Containment and recovery	If effective, can physically remove floating surface oil from the water, thereby preventing shoreline impacts. Recovered oil may be reprocessed.	Operation of vessels (such as burn fuel, physical presence, discharges) for placing and moving booms. Equipment- and labour-intensive. Waste disposal of recovered hydrocarbons. Cleaning and disposal of contamination from boom.	Not feasible for MDO spills due to rapid dispersion and spreading preventing the slick from reaching the required thickness for the response option to be effective (Bonn Agreement Oil Appearances Code 4 (discontinuous true oil colour) and 5 (continuous true oil colour)). Furthermore, spill modelling of the MDO scenario (RPS, 2022b) predicts no instances where the slick is >50 g/m ² (which is considered the minimum threshold for feasible containment and recovery operations). Corralling volatile hydrocarbons such as MDO is also considered unsafe for response personnel. Boom deployment may be delayed in serious incident where safety of personnel is priority.	Level 2 – MDO	No	-	Not applicable for MDO spills due to rapid dispersion and spreading, therefore unlikely to encounter films great than 20 to 25 µm, making recovery via skimmers ineffective. Additionally, corralling volatile hydrocarbons such as MDO is also considered unsafe for response personnel.

Spill Response Strategy	Overview of Environmental Benefits	Associated Environmental Risks/Impacts	Operational Constraints	Apply Response	Primary or Secondary Response	Justification Note	
			Wind and surface currents are key constraint for the boom operation in the open ocean. Current speed for boom (approx. 1 knot depending on boom and angle). Oil recovery typically <10% of the oil spilled in open ocean environments.				
Shoreline Protection	Can deflect hydrocarbons from shoreline receptors for capture and recovery or dilute into water column.	Physical disturbance to intertidal and shoreline habitats from operating vessels and booms (such as anchoring booms and vessels). Defective booms. Operation of vessel (such as burn fuel, physical presence, discharges). Cleaning of contaminated booms and waste disposal of recovered hydrocarbons and water. Waste disposal of recovered hydrocarbons.	Spill modelling of the MDO scenario (RPS, 2022b) predicts no shoreline receptors at risk of contact at any of the assessed thresholds for the duration of the spill. Wind, surface currents and tidal ranges are key constraints for operation of shoreline booms. Most feasible in locations where access to the coastline allows vehicles and vessels to undertake operations.	Level 2 – MDO	No	-	Modelling does not predict shoreline contact at any of the assessed thresholds for the duration of the spill. This strategy would only be considered where it is safe and practical to implement and where priority receptors are at risk of impact from MDO.
Mechanical Dispersion	May be applicable for the localised entrainment of surface oil but is not considered to have a significant effect on removing oil from the surface.	May temporarily increase the concentration of entrained and dissolved oil in the vicinity of submerged shallow water receptors (such as corals, seagrass and macroalgae). Operation of vessel (such as burn fuel, physical presence, discharges).	Offshore vessels are designed not to cavitate, so not efficient at breaking up hydrocarbon films. Small particle size required otherwise material resurfaces. Wind speeds above 20 knots provide natural dispersion, making this method redundant. Cannot be performed where there are high concentrations of vapour.	Level 2 – MDO	No	-	Mechanical dispersion uses vessels with propellers that can cavitate. The turbulence created helps break up surface slicks, dispersing hydrocarbons into the column where biodegradation is enhanced due to smaller droplet sizes. This strategy requires vessels on site with engines that cavitate. Wave action provides some effect. Leaving MDO on the surface may be more advantageous, given its propensity to evaporate.
In-Situ Burning	Removes oil from environment.	Operation of a four-vessel spread (two boom sweep, one igniter, one observer). Particulates (smoke) in air with associated health risks. Incomplete combustion may produce toxic chemicals.	Spill modelling of the MDO scenario (RPS, 2022b) predicts no instances where the slick reaches the minimum suitable thickness (5-10 mm) required for ignition. Wind is a key constraint, calm seas and ideal conditions are considered necessary for booming operations to get a thick film thickness and safe ignition. Availability of fire boom limited in the region.	Level 2 – MDO	No	-	Not applicable as insufficient surface slick thickness predicted. The experience and expertise are not readily available in Australia.
Shoreline Clean Up	Can reduce stranded oil on shorelines and reduce remobilisation of oil.	Physical disturbance to shoreline habitats from staging areas and clean-up activities. Contamination via spreading oil beyond shorelines. Labour-intensive. Logistics. Waste management.	Spill modelling of the MDO scenario (RPS, 2022b) predicts no shoreline receptors at risk of contact or accumulation at any of the assessed thresholds for the duration of the spill.	Level 2 – MDO	No	-	Modelling does not predict shoreline contact at any of the assessed thresholds for the duration of the spill. This strategy would only be considered where it is safe and practical to implement and where priority receptors are at risk of impact from MDO.
Natural Recovery	No additional impacts associated with response activities.	No additional impacts.	No constraints.	Level 2 – MDO	Yes	Primary	Makes use of the natural degradation and weathering process to break down and remove surface oil and stranded hydrocarbons. Effectively,

Spill Response Strategy	Overview of Environmental Benefits	Associated Environmental Risks/Impacts	Operational Constraints	Apply Response		Primary or Secondary Response	Justification Note
							this response strategy means no direct action other than monitor and evaluate spill trajectory and rate of habitat/community recovery.
Scientific Monitoring	Primary tool for determining the extent, severity and persistence of environmental impacts from oil spills, and determine how effective the oil spill response is in protecting the environment.	Labour intensive. Logistics. Operation of vessel (such as burn fuel, physical presence, discharges). Noise from support vessels and helicopters. Vessel collision. Obstacles to other sea users.	Weather conditions may constrain visual observations (vessel and aerial). Stringent safety management requirements for aerial and marine operations. Potential coordination of multiple vessels and aircraft within limited area (simultaneous operations).	Level 2 – MDO	Yes	Primary	Applicable to Level 2-3 spills to monitor impact and recovery from oil spill events. The type and extent of scientific monitoring will depend on the nature and scale of oil contact to sensitive receptor locations as determined through monitor and evaluate activities.
Oiled Wildlife Response	Pre-oiling activities including onshore exclusion barriers, hazing and pre-emptive capture used to reduce incidence of animals becoming oiled. Post-oiling activities including collection and rehabilitation to treat oiled fauna and return to similar suitable habitat. Utilisation of local skilled veterinarians for treatment of oiled wildlife.	Labour-intensive. Logistics. Operation of vessel (such as burn fuel, physical presence, discharges). Hazing: stress to individuals, accidentally drive oiled wildlife into oil, separate groups/individuals (such as parent/offspring pairs) or disturb nesting and foraging behaviours. Pre-emptive capture and post-oiled collection: Risk of injury and inappropriate field collection/handling during pre-emptive capture and after oiled collection. Rehabilitation: inadequate/inappropriate animal husbandry, leading to stress, injury or death. Inappropriate relocation points leading to disorientation and stress.	Wind is a key constraint, calm seas and ideal conditions are considered necessary for capture operations. Weather constraints for use of aerial observation and tracking fauna. Navigation of multiple vessels within a small area. Availability of suitable space/location in township to handle rehabilitation and fauna treatment.	Level 2 – MDO	Yes	Primary	Applicable where surface hydrocarbons cause oiling risk to marine fauna. Applicable to Level 2 spills.
Waste Management	Benefits outweigh impacts. Oiled waste removed from site by trained contractors and dealt with at an approved waste management facility.	Labour intensive. Logistics.	Low persistence hydrocarbon expected to generate minimal (if any) waste. Logistics constraints in moving waste from site to approved waste facility.	Level 2 – MDO	Yes	Secondary	Applicable where surface hydrocarbons cause oiling risk to shorelines.

10.4 Environmental Impact and Risk Assessment for Spill Response Activities

While spill response activities are intended to reduce the potential environmental consequences of a hydrocarbon spill, they can introduce new impacts and risks. In the event of a hydrocarbon spill, response strategies will be implemented where possible to reduce environmental impacts to ALARP. The response strategies deemed appropriate, based on the predicted nature and scale of the worst-case spill scenarios identified for Stybarrow Decommissioning and Field Management Activities, have been identified via the strategic NEBA and ALARP demonstration (refer to **Section 10.3** and **Appendix E**).

The OPEP (**Appendix D**) provides selected response strategies in the event of a spill, being:

- source control – vessel control
- monitor and evaluate
- natural recovery
- scientific monitoring
- oiled wildlife response
- waste management.

The following sub-sections present the suitable response spill strategies identified in **Table 10-2**, the impacts and risks associated with their implementation, and control measures for reducing impacts and risks to ALARP and acceptable levels. **Section 10.6** assesses their effectiveness and the adequacy of resourcing available to support spill response strategies to further justify reducing impacts and risks to ALARP and acceptable levels.

Typical environmental aspects, impacts and risks that may arise from conducting spill response activities are similar to those already described in **Section 7** and **Section 8** for planned activities and unplanned events, particularly for vessel-based operations. The greatest potential for impacts additional to those described for routine activities is from shoreline clean-up and oiled wildlife response operations.

A number of response strategies, namely source control, monitor and evaluate, scientific monitoring and oiled wildlife response, include components of their response activities that are vessel-based, and the impacts and risks associated with their implementation from vessels are assessed previously in this EP and relate to:

- Physical presence (**Section 7.1**)
- Vessel discharges and emissions (light, noise, atmospheric, routine and non-routine discharges, seabed disturbance, waste management in **Sections 7.2, 7.3, 7.4, 7.6** and **7.8**)
- Unplanned discharges (hydrocarbon spills, solids and liquids in **Sections 8.2, 8.6** and **8.7**)
- Marine fauna interaction (**Section 8.4**)
- Introduction of invasive marine species (**Section 8.5**).

As such, impacts and risks relating to the above aspects associated with the spill response strategies are not considered further in this assessment.

10.4.1 Spill Response: Source Control – Vessel Control

The purpose of this section is to describe Woodside's strategy relating to Source Control to:

- limit the release of oil discharged to the marine environment and prevent further release of oil by isolating the source of the release
- manage to ALARP and acceptable levels the risks and impacts of the Source Control response strategy to environmental sensitivities.

The strategy includes identifying the risks and impacts associated with Source Control, which includes considering the benefits associated with vessel control. It then demonstrates these impacts and risks can be reduced to ALARP and acceptable levels, enabling source control to be a primary response strategy.

Specifically, this section includes:

- identification of the potential impacts of source control, which includes discussion on source control effectiveness, demonstrating the application of source control can reduce the total volume of oil ashore
- demonstration of oil spill preparedness
- controls in place to mitigate the impacts and risks of source control on sensitive environmental receptors
- demonstration that the source control strategy proposed by Woodside is ALARP and acceptable
- environmental performance outcomes, performance standards and measurement criteria for source control.

10.4.1.1 Summary of Activity – Vessel Control

The project vessels will have a current SOPEP (as appropriate to vessel class) in accordance with the requirements of MARPOL Annex I (Prevention of Pollution by Oil). This plan outlines responsibilities, specific procedures and resources available for an oil or chemical spill. Spills that occur beyond the capability of the vessel will be managed in accordance with Woodside’s Stybarrow Decommissioning and Field Management OPEP (**Appendix D**).

Source Control: Vessel Control	
Initiation Criteria	Notification of Level 1-2 Oil Spill.
Activation Time	Immediately, noting safety of personnel as the priority.
Resources	Vessel Master and crew trained in vessel-specific SOPEP procedures. On-board spill equipment, as per vessel-specific SOPEP.
Termination Criteria	Release of oil to the marine environment has ceased and the workplace environment is deemed environmentally safe and free of hydrocarbons.

Vessel Source Control methods are implemented as the primary response strategy for responding to single point releases from hull leakage and spills in the event of a vessel collision. Vessel Source Control will be activated immediately by persons onboard, under the direction of the Vessel Master, to reduce or control the discharge, and conducted according to the vessel-specific MARPOL-compliant SOPEP for vessels, as required under International Convention for Protection of the Sea (Prevention of Pollution from Ships) Act 1983; AMSA Marine Orders – Part 91 and Part 94; and MARPOL Annexes I and III. Vessel Source Control activities will always consider human health and safety.

Vessel Source Control activities will depend on the type of incident but may include:

- closing valves, isolating pipework and shutting down pumps
- using temporary patches or bungs/plugs to seal holes to prevent further releases, until more permanent measures can be taken
- transferring product between tanks on the vessel or between vessels, in the event of a leaking tank or rupture from a vessel collision
- using spill response equipment located around the vessel, including small booms, absorbent pads, spill absorbent litter, spill recovery containers, permissible cleaning agents and other materials available onboard to clean up spilled material on deck. Remaining oily spill residues on decks or other surfaces may be washed into drains leading to the oil-water separator system to treat the effluent before discharge.

10.4.1.2 Potential Environmental Impact and Risks

None in addition to those already associated with vessel-based activities.

10.4.1.3 Environmental Performance – Vessel Source Control

Table 10-3 provides the environmental performance outcomes, performance standards and measurement criteria for the Source Control response strategy.

In the event of a spill, Operational NEBAs (refer to Section 4 of the OPEP) will be completed daily, to take into account spill trajectories, prevailing weather and planned actions for the day.

Table 10-3: Environmental performance – vessel source control

Source Control			
Environmental Performance Outcomes	To stop the flow of hydrocarbons into the marine environment.		
Response Strategy	Control Measure ID	Performance Standard	Measurement Criteria (Section 10.5)
Source Control – Vessel Control	1.1	Operational NEBA to include evaluation of requirement for implementing Source Control.	Documentation of completed Operational NEBA.
	1.2	Predictions of spill trajectory to be modelled to support the Operational NEBA.	Documentation of Contract with AMOSC who maintains call-off contract with RPS.
	1.3	Response strategy activities continued until termination criteria met.	Incident log.
	1.4	Source Control – Vessel Control to be managed in accordance with vessel-specific (SOPEP/ Shipboard Marine Pollution Emergency Plan for vessels, in line with MARPOL Annex I).	Vessel audit/inspection records.
			Spill reports logged as per vessel procedures. Spill exercise closeout reports.
	1.5	Onboard response capabilities in the event of an oil spill are tested, maintained and available before mobilising to demonstrate preparedness.	Record of SOPEP drills and spill exercises in vessel log.
Vessel audit/inspection records.			
1.6	Scupper plugs or equivalent deck drainage control measures available where hazardous chemicals and hydrocarbons stored and frequently handled.	Vessel audit/inspection records.	

10.4.2 Spill Response: Monitor and Evaluate

10.4.2.1 Summary of Activity

The Monitor and Evaluate response strategy will be implemented for Level 1-2 spills. Constant monitoring and evaluation by surveillance is a mandatory strategy required for making real-time decisions during a spill. This strategy includes assessing the location, weather and sea state conditions, volume of oil being released, oil weathering state and trajectory of the spill. The spill will be monitored constantly and evaluated by surveillance techniques.

Table 10-4 lists the operational monitoring plans that support the successful execution of this response technique.

Table 10-4: Description of supporting operational monitoring plans

ID	Title
OM01	Predictive modelling of hydrocarbons to assess resources at risk

ID	Title
OM02	Surveillance and reconnaissance to detect hydrocarbons and resources at risk
OM03	Monitoring of hydrocarbon presence, properties, behaviour and weathering in water
OM04	Pre-emptive assessment of sensitive receptors at risk
OM05	Shoreline assessment

Woodside maintains an *Operational Monitoring Operational Plan*. If shoreline contact is predicted, Response Protection Areas (RPAs) will be identified and assessed before contact. If shorelines are contacted, a shoreline assessment survey will be completed to guide effective shoreline clean-up operations. This plan includes the process for the IMT to mobilise resources depending on the nature and scale of the spill.

The proximity of Karratha/Dampier to the spill event location means that multiple logistical options are available to monitor the spill in relatively short timeframes.

The purpose of this section is to describe Woodside's approach relating to the Monitor and Evaluate response strategy to:

- track and monitor the trajectory of the spill so real-time decisions can be made to prevent impacts to extreme and highly sensitive environmental receptors
- manage to ALARP and acceptable levels the risks and impacts of the Monitor and Evaluate response strategy on sensitive environmental receptors.

The strategy includes a description of the impacts and risks associated with Monitor and Evaluate operations during spills, which includes consideration of the benefits associated with the Monitor and Evaluate response strategy. It then demonstrates these impacts and risks can be reduced to ALARP and acceptable levels, enabling Monitor and Evaluate to be a key response strategy in the event of hydrocarbon spills.

Specifically, this section includes:

- assessment of the potential impacts and risks of the Monitor and Evaluate response strategy and the benefits of each response activity
- controls in place to mitigate the impacts and risks of the Monitor and Evaluate response strategy on sensitive environmental receptors
- demonstration that the proposed Monitor and Evaluate response strategy is ALARP and acceptable
- environmental performance outcomes, performance standards and measurement criteria for the Monitor and Evaluate response strategy.

Monitoring and evaluation will require access to aircraft, vessels and personnel. In the event of a spill, the monitoring and evaluation methods that will typically be implemented, depending on the volume of the spill, are:

- aerial surveillance
- vessel surveillance
- oil spill tracking buoys (OSTBs)
- spill trajectory modelling
- satellite imagery
- operational water sampling
- shoreline assessment.

10.4.2.1.1 OM01 – Predictive modelling of hydrocarbons to assess resources at risk – Objective, Scope, Rationale and Methods

Oil spill trajectory modelling will be conducted to predict the extent of impacts to offshore habitat for any physical disturbance that may impact shoreline, nearshore areas, or areas protected for the purpose of conservation. The

CIMT will engage RPS via a call-off contract maintained by AMOSC to start modelling the spill and correlate it with real data received from aerial and vessel surveillance, and OSTBs. From these sources, RPS will develop an initial oil spill trajectory model for the next five days, which will allow the IMT to direct resources for the next phase of the response. Alternative oil spill modelling agencies may be selected based on operational requirements.

OM01 – Predictive modelling of hydrocarbons to assess resources at risk	
Initiation Criteria	OM01 will be triggered immediately following all hydrocarbon spill levels.
Activation Time	Within four hours of notification, oil spill modelling agency to provide oil spill trajectory modelling report.
Resources	Oil spill tracking modellers and software available via contract with RPS Response.
Termination Criteria	The hydrocarbon discharge has ceased, and no further surface oil is visible Response activities have ceased Hydrocarbon spill modelling (as verified by OM02 surveillance observations) predicts no additional natural resources will be impacted

10.4.2.1.2 OM02 – Surveillance and reconnaissance to detect hydrocarbons and resources at risk – Objective, Scope, Rationale and Methods

OM02 Surveillance and reconnaissance to detect hydrocarbons and resources at risk includes the following monitoring components:

- Aerial surveillance
- Oil spill tracking buoys (OSTBs)
- Satellite imagery

OM02 will be commissioned by the Incident Controller or by a designated officer of the nominated Control Agency.

10.4.2.1.2.1 Aerial Surveillance

Woodside has access to helicopters under a crew transfer contract with a contracted helicopter provider. Woodside has access to trained aerial surveillance observers in AMOSC and industry mutual aid through its AMOSC Contract. In addition to the aircrew, trained aerial surveillance observers will be included on the flights to confirm the size of the spill and its location. This information will be sent back to the IMT for further processing. A schedule of flights will be developed, to ensure sufficient timely information is available for fate modelling. Aerial observations will only be performed during daylight hours. The aerial surveillance will include digital imagery of the spill, the global positioning system co-ordinates of the spill extremities, an estimate of the spill thickness and the time of the observations.

10.4.2.1.2.2 Oil Spill Tracking Buoys

Oil Spill Tracking Buoys (OSTBs) will monitor the movement of hydrocarbons via satellite.

10.4.2.1.2.3 Satellite Imagery

Satellite imagery will be a supplementary source of information that can improve awareness of the extent, trajectory and even thickness of a slick. Suitable imagery is available via KSAT satellite imagery contract. The most appropriate images for purchase will be based on the extent and location of the oil spill. Synthetic aperture radar and visible imagery may both be of value.

For further detail on OM02 Surveillance and reconnaissance to detect hydrocarbons and resources at risk, refer to Woodside’s *Operational Monitoring Operational Plan*.

OM02 Surveillance and reconnaissance to detect hydrocarbons and resources at risk	
Initiation Criteria	OM02 will be triggered immediately for all incident levels following a hydrocarbon spill.

OM02 Surveillance and reconnaissance to detect hydrocarbons and resources at risk	
Activation Time	Aerial surveillance: <ul style="list-style-type: none"> ▪ Trained observers deployed within 24 hours. Oil Spill tracking buoys: <ul style="list-style-type: none"> ▪ Within two hours, as per First Strike Plan Satellite imagery: <ul style="list-style-type: none"> ▪ Within two hours of forming the IMT.
Resources	Aerial surveillance <ul style="list-style-type: none"> ▪ Rotary wing aircraft and flight crew: <ul style="list-style-type: none"> - Contracted helicopter provider. - Aerial surveillance AMOSC staff, AMOSC Core Group and industry Mutual Aid. ▪ Unmanned aerial vehicle and pilots. <ul style="list-style-type: none"> - AMOSC, Mutual Aid, OSRL, local WA hire companies. OSTB: <ul style="list-style-type: none"> ▪ Deployed from facility within 2 hours ▪ Additional OSTBs available from KBSF stockpile. Satellite imagery: <ul style="list-style-type: none"> ▪ Contract with KSAT Satellite Services
Termination Criteria	72 hours has elapsed since the last confirmed observation of surface hydrocarbons. Latest hydrocarbon spill modelling results (OM01) do not predict surface exposures at visible levels.

10.4.2.1.3 OM03 – Monitoring of hydrocarbon presence, properties, behaviour and weathering in water – Objective, Scope, Rationale and Methods

OM03 Monitoring of hydrocarbon presence, properties, behaviour and weathering in water will be commissioned by the Incident Controller or by a designated officer of the nominated Control Agency. Water quality monitoring is a process that includes the monitoring of entrained hydrocarbon within the water column either from subsea releases, natural dispersion or chemical dispersant applications. Water quality monitoring can determine the effectiveness of dispersant application and will include taking water samples (both surface and subsea) that can be sent to laboratories for further analysis.

Woodside has a contract in place with a monitoring service provider to rapidly stand up a water quality monitoring service.

For further detail on OM03 Monitoring of hydrocarbon presence, properties, behaviour and weathering in water, refer to Woodside’s *Operational Monitoring Operational Plan*.

OM03 Monitoring of hydrocarbon presence, properties, behaviour and weathering in water	
Initiation Criteria	OM03 will be triggered immediately following a level 2/3 hydrocarbon spill.
Activation Time	Within 3 days of forming the IMT
Resources	Contract for access to specialist personnel and equipment. Access to vessel with a dedicated winch, A-frame or Hiab and ancillaries to deploy the equipment

OM03 Monitoring of hydrocarbon presence, properties, behaviour and weathering in water	
Termination Criteria	Response technique has been successful. Response technique is no longer effective. Response technique is having a greater deleterious effect than the hydrocarbon. Benefit of the technique is insufficient to justify the cost.

10.4.2.1.4 OM04 – Pre-emptive assessment of sensitive receptors at risk – Objective, Scope, Rationale and Methods

OM04 Pre-emptive assessment of sensitive receptors at risk will be commissioned by the Incident Controller or by a designated officer of the nominated Control Agency. Pre-emptive assessment of sensitive receptors aims to undertake a rapid assessment of the presence, extent and current status of sensitive receptors prior to contact from the hydrocarbon spill, by providing categorical or semi-quantitative information on the characteristics of resources at risk. Indirectly, qualitative/semi-quantitative pre-contact information collected on the status of the environmental resources may also aid in the verification of environmental baseline data and provide context for the assessment of environmental impacts, as determined through subsequent Scientific Monitoring Programs.

Woodside has a pool of internal trained personnel and environmental contractors in place to conduct pre-emptive surveys.

For further detail on OM04 Pre-emptive assessment of sensitive receptors at risk, refer to Woodside’s *Operational Monitoring Operational Plan*.

OM04 Pre-emptive assessment of sensitive receptors at risk	
Initiation Criteria	Contact of a sensitive habitat or shoreline is predicted by OM01, OM02 and/or OM03. The pre-emptive assessment methods can be implemented before contact from hydrocarbons (once a receptor has been contacted by hydrocarbons it will be assessed under OM05).
Activation Time	Within 2 days of forming the IMT
Resources	Internal trained personnel. Contracts with environmental service providers.
Termination Criteria	Locations predicted to be contacted by hydrocarbons have been contacted. The location has not been contacted by hydrocarbons and is no longer predicted to be contacted by hydrocarbons (resources should be reallocated as appropriate).

10.4.2.1.5 OM05 – Shoreline assessment – Objective, Scope, Rationale and Methods

OM05 Shoreline assessment will be commissioned by the Incident Controller or by a designated officer of the nominated Control Agency. Shoreline assessment provides rapid accurate geo-referenced documentation and data of shoreline contamination conditions. Teams will be mobilised to systematically survey shorelines both precontact and upon contamination to advise on clean-up strategies. The information collected can be used to develop real-time decisions and to expedite shoreline clean-up planning and response operations.

Shoreline Clean up Assessment Technique (SCAT) is a well-established tool that can be used to document the status of impact shorelines and their subsequent treatment recommendations in a methodical and scientific manner. Its objective is to collect and document real-time data on stranded hydrocarbons and shoreline conditions in a rapid, accurate, systematic and consistent way in order to provide operational support and aid in the development of an effective response.

Woodside has a pool of internal trained personnel to conduct shoreline assessment surveys. In addition, Woodside has access to AMOSC Core Group members who are trained in shoreline assessment techniques, and a surge capacity can be met via contracts with OSRL.

For further detail on OM05 Shoreline assessment, refer to Woodside's *Operational Monitoring Operational Plan*.

OM05 Shoreline assessment	
Initiation Criteria	OM05 will be triggered when a sensitive habitat or shoreline is predicted to be contacted by hydrocarbons by OM01, OM02 and/or OM03.
Activation Time	Within 2 days of forming the IMT
Resources	Internal trained personnel AMOSC Master Services Agreement OSRL Service Level Agreement
Termination Criteria	No additional response or clean-up of wildlife or habitats is predicted. Spill response and clean-up activities have ceased. OM05 survey sites established at sensitive habitat and shoreline locations will continue to be monitored during SM02. The formal transition from OM05 to SM02 will begin on cessation of spill response and clean-up activities.

10.4.2.2 Oil Spill Preparedness

Oil spill preparedness for the elements of the Monitor and Evaluate response strategy comprise contractual arrangements with Oil Spill Response Agencies (OSRAs), such as AMOSC/OSRL, and/or service agreements with third party vendors for providing services such as water quality monitoring, OSTBs and satellite imagery.

10.4.2.3 Potential Environmental Impacts and Risks

The risks and impacts associated with the vessels involved in the Monitor and Evaluate response strategy from their physical presence, noise and atmospheric emissions, interference with marine fauna, planned and unplanned discharges, and accidental spills have been discussed in the next sections.

The impacts and risks associated with aircraft involved in the Monitor and Evaluate response strategy relate to acoustic disturbance. During the response activities, aircraft and vessels will generate noise both offshore and in coastal areas near sensitive receptors such as shorebirds, marine mammals, fish and shark species.

10.4.2.4 Environmental Performance - Monitor and Evaluate

Table 10-5 provides the environmental performance outcomes, performance standards and measurement criteria for the Monitor and Evaluate response strategy.

The initiation criteria, course of action, resources, supporting documentation and termination criteria associated with each response strategy are detailed above.

Table 10-5: Environmental Performance – Monitor and Evaluate

Monitor and Evaluate			
Environmental Performance Outcome	To gather information from multiple sources to establish an accurate common operating picture as soon as practicable and predict the fate and behaviour of the spill to validate planning assumptions and adjust response plans as appropriate to the scenario.		
Control Measure	Performance Standard		Measurement Criteria (Section 10.5)
Oil spill trajectory modelling (OM01)	2.1	Initial modelling available within 6 hours using the Rapid Assessment Tool.	1, 3B, 3C, 4
	2.2	Detailed modelling available within 4 hours of APASA receiving information from Woodside.	
	2.3	Detailed modelling service available for the duration of the incident upon contract activation.	
Tracking buoy (OM02)	3.1	Tracking buoy located on facility/vessel and ready for deployment 24/7.	1, 3A, 3C, 4
	3.2	Deploy tracking buoy from facility within 2 hours as per the First Strike Plan.	1, 3A, 3B, 4
	3.3	Contract in place with service provider to allow data from tracking buoy to be received 24/7 and processed.	1, 3A, 3C, 4
	3.4	Data received to be uploaded into Woodside COP daily to improve the accuracy of other monitor and evaluate strategies.	1, 3B, 4
Satellite imagery (OM02)	4.1	Contract in place with 3 rd party provider to enable access and analysis of satellite imagery. Imagery source/type requested on activation of service.	1, 3C, 4
	4.2	3 rd party provider will confirm availability of an initial acquisition within 2 hours.	1, 3B, 3C, 4
	4.3	First image received with 24 hours of Woodside confirming to 3 rd party provider its acceptance of the proposed acquisition plan.	1
	4.4	3 rd party provider to submit report to Woodside per image. Report is to include a polygon of any possible or identified slick(s) with metadata.	1
	4.5	Data received to be uploaded into Woodside COP daily to improve accuracy of other monitor and evaluate strategies.	1, 3B, 4
	4.6	Satellite imagery services available and employed during response.	1, 3C, 4
Aerial surveillance (OM02)	5.1	2 trained aerial observers available to be deployed by day 1 from resource pool.	1, 2, 3B, 3C, 4
	5.2	1 aircraft available for 2 sorties per day, available for the duration of the response from day 1.	1, 3C, 4
	5.3	Observer to compile report during flight as per First Strike plan.	1, 2, 3B, 4

Monitor and Evaluate			
		Observers report available to the IMT within 2 hours of landing after each sortie.	
	5.4	Unmanned Aerial Vehicles/Systems (UAV/UASs) to support Shoreline Clean-up Assessment Technique (SCAT), containment and recovery and surface dispersal and pre-emptive assessments as contingency if required.	1, 2
Hydrocarbon detection in water (OM03)	6.1	Activate 3rd party service provider as per First Strike plan. Deploy resources within 3 days: 3 specialists in water quality monitoring 2 monitoring systems and ancillaries 1 vessel for deploying the monitoring systems with a dedicated winch, A-frame or Hiab and ancillaries to deploy the equipment.	1, 2, 3C, 3D, 4
	6.2	Water monitoring services available and employed during response.	1, 3C, 4
	6.3	Preliminary results of water sample as per contractor's implementation plan within 7 days of receipt of samples at the accredited lab.	
	6.4	Daily fluorometry reports as per service provider's implementation plan will be provided to IMT to validate modelling and monitor presence/absence of entrained hydrocarbons.	
	6.5	Use of Autonomous Underwater Vehicles (AUVs) for hydrocarbon presence and detection may be used as a contingency if the operational NEBA confirms conventional methods are unsafe or not possible.	1, 2, 3C, 4
Pre-emptive assessment of sensitive receptors (OM04)	7.1	Within 2 days of impacts predicted by OM01/02/03, and in agreement with WA DoT (for Level 2/3 incidents), deployment of 2 specialists from resource pool in establishing the status of sensitive receptors	1, 2, 3B, 3C, 4
	7.2	Daily reports provided to IMT on the status of the receptors to prioritise Response Protection Areas (RPAs) and maximise effective utilisation of resources.	1, 3B, 4
Shoreline assessment (OM05)	8.1	Within 2 days of impacts predicted by OM01/02/03, and in agreement with WA DoT (for Level 2/3 incidents), deployment of 1 specialist in SCAT for each RPA with predicted impacts greater than 100 g/m ² .	1, 2, 3B, 3C, 4
	8.2	SCAT reports provided to IMT daily detailing the assessed areas to maximise effective utilisation of resources.	1, 3B, 4
Management of environmental impact of the response risks	9.1	If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore benthic environments with a preference for areas of sandy seabed where they can be identified.	1
	9.2	Shoreline access routes with the least environmental impact identified will be selected by a specialist in SCAT operations.	

Monitor and Evaluate			
	9.3	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	
	9.4	Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves	

10.4.3 Spill Response: Natural Recovery

10.4.3.1 Summary of Activity

Natural recovery, as the title suggests, uses the natural degradation and weathering processes to break down and remove surface oil and stranded hydrocarbons. Effectively, this response strategy means no direct action is taken other than to monitor and evaluate the oil spill trajectory, the rate of dispersion of the hydrocarbon, and the rate of habitat/community recovery. As such, no additional risks or impacts will occur, other than those described previously.

10.4.4 Spill Response: Scientific Monitoring

A scientific monitoring program (SMP) would be activated following a Level 2 or 3 unplanned hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors. This would consider receptors at risk (ecological and socio-economic) for the entire predicted Environment that Maybe Affected (EMBA) and in particular, any identified Pre-emptive Baseline Areas (PBAs) for the credible spill scenarios or other identified unplanned hydrocarbon releases associated with the operational activities (refer to **Section 8.2**).

The outputs of the stochastic hydrocarbon spill modelling are used to assess the environmental risk, in terms of delineating which areas of the marine environment are predicted to be exposed to hydrocarbons exceeding environmental threshold concentrations (refer to **Table 8-4**). The summary of all the locations where hydrocarbon thresholds could be exceeded by any of the simulations modelled is defined as the EMBA. The petroleum activity worst-case credible spill scenario (MDO spill from vessel collision) defines the EMBA and is the basis of the SMP approach presented in this section

It should be noted that the resulting SMP receptor locations may differ from the Priority Protection Areas discussed in **Appendix D** of this document (Stybarrow Decommissioning and Field Management OPEP) due to the applicability of different hydrocarbon threshold levels. The SMP would be informed by the data collected via the operational monitoring program (OMP) studies, however, it differs from the OMP in being a long-term program independent of, and not directing, the operational oil spill response or monitoring of impacts from response activities (refer to **Section 10.4.2**, and **Appendix H** for the operational monitoring overview).

Key objectives of the Woodside oil spill scientific monitoring program are:

- Assess the extent, severity and persistence of the environmental impacts from the spill event; and
- Monitor subsequent recovery of impacted key species, habitats and ecosystems.

The SMP comprises ten targeted environmental monitoring programs to assess the condition of a range of physico-chemical (water and sediment) and biological (species and habitats) receptors including EPBC Act listed species, environmental values associated with protected areas and socio-economic values, such as fisheries. The ten SMPs are as follows:

- SM01 – Assessment of the presence, quantity and character of hydrocarbons in marine waters (linked to OM01 to OM03)
- SM02 – Assessment of the presence, quantity and character of hydrocarbons in marine sediments (linked to OM01 and OM05)
- SM03 – Assessment of impacts and recovery of subtidal and intertidal benthos
- SM04 – Assessment of impacts and recovery of mangroves/saltmarsh habitat

- SM05 – Assessment of impacts and recovery of seabird and shorebird populations
- SM06 – Assessment of impacts and recovery of nesting marine turtle populations
- SM07 – Assessment of impacts to pinniped colonies including haul-out site populations
- SM08 – Desktop assessment of impacts to other non-avian marine megafauna
- SM09 – Assessment of impacts and recovery of marine fish (linked to SM03)
- SM10 – Assessment of physiological impacts to important fish and shellfish species (fish health and seafood quality/safety) and recovery.

These SMPs have been designed to cover all key tropical and temperate habitats and species within Australian waters and broader, if required. A planning area for scientific monitoring is also identified to acknowledge potential hydrocarbon contact below the environmental threshold concentrations and beyond the EMBA. This planning area has been set with reference to the entrained low exposure value of 10 ppb detailed in the NOPSEMA Bulletin #1 Oil Spill Modelling (2019).

10.4.4.1 Scientific Monitoring Deployment Considerations

Table 10-6: Scientific monitoring deployment considerations

Scientific Monitoring Deployment Considerations	
Existing baseline studies for sensitive receptor locations predicted to be affected by a spill	<p>Pre-emptive Baseline Areas (PBAs) of the following two categories:</p> <p>PBAs within the predicted <10-day hydrocarbon contact time prediction: As part of this assessment, a desktop review was conducted of available and appropriate baseline data for key receptors for locations (if any) that are potentially impacted within 10 days of a spill (based on the EMBA). Furthermore, the need to conduct baseline data collection to address data gaps and demonstrate spill response preparedness is assessed (refer to Appendix H, Section 3). In the scenario that baseline data needs are identified, planning for baseline data acquisition is typically commenced pre-petroleum activity and the execution of studies undertaken considers receptor type, seasonality and temporal assessment requirements and location conditions.</p> <p>PBAs predicted >10 days to hydrocarbon contact: As part of this assessment, a desktop review is conducted of available and appropriate baseline data for key receptors for locations (if any) that are potentially impacted >10 days' time of a hydrocarbon spill event and documented (refer to Response Planning Assumptions) In the event of a spill, the SMP activation (as per the Stybarrow Decommissioning and Field Management Oil Pollution First Strike Plan, Appendix A of Appendix D) directs the SMP team to follow the steps outlined in the SMP Operational Plan. The steps include: the review of availability and type of existing baseline data, with particular reference to any Pre-emptive Baseline Areas (PBAs) identified as >10 days to hydrocarbon contact as predicted by forecast modelling trajectories. Such information is used to identify response phase PBAs and plan for the activation of SMPs for pre-emptive (i.e., pre-hydrocarbon contact) baseline assessment.</p>
Pre-emptive Baseline in the event of a spill	Activation of SMPs in order to collect baseline data at sensitive receptor locations with predicted hydrocarbon contact time >10 days (refer to Response Planning Assumptions) and the process as documented in Appendix H , Section 2).
Survey platform suitability and availability	In the event of the SMP activation, suitable survey platforms are available and can support the range of equipment and data collection methodologies to be implemented in nearshore and offshore marine environments.
Trained personnel to implement SMPs suitable and available.	Access to trained personnel and the sampling equipment contracted for scientific monitoring via a dedicated scientific monitoring program standby contract.

Scientific Monitoring Deployment Considerations	
Met-ocean conditions	<p>The following met-ocean conditions are the identified limits for implementing SMPs:</p> <ul style="list-style-type: none"> ▪ Waves <1 m for nearshore systems ▪ Waves <1.5 m for offshore systems ▪ Winds <20 knots ▪ Daylight operations only <p>SMP implementation will be planned and managed according to HSE risk reviews and the met-ocean conditions on a day-to-day basis by SMP operations.</p>

10.4.4.2 Response Planning Assumptions

Table 10-7: Scientific monitoring response planning assumptions

Response Planning Assumptions	
Pre-emptive Baseline Areas (PBAs)	<p>Pre-emptive Baseline Areas (PBAs) identified through the application of defined hydrocarbon impact thresholds during the Quantitative Spill Risk Assessment process and a consideration of the minimum time to contact at receptor locations fall into two categories:</p> <ul style="list-style-type: none"> ▪ PBAs for which baseline data exist or are planned for and data collection may commence pre-petroleum activity (for locations identified as ≤ 10 days minimum time to contact). ▪ PBAs (for locations > 10 days minimum time to contact) for which baseline data may be collected in the event of an unplanned hydrocarbon release. In the event of a spill, response phase PBAs are prioritized based on vulnerability (i.e. time to contact and environmental sensitivity) to potential impacts from hydrocarbon contact and an identified need to acquire baseline data. <p>Time to hydrocarbon contact of >10 days has been identified as a minimum timeframe within which it is feasible to plan and mobilise applicable SMPs and commence collection of baseline (pre-hydrocarbon contact) data, in the event of an unplanned hydrocarbon release from the activity.</p> <p>The PBAs for Stybarrow Decommissioning and Field Management Activity are identified and listed in Appendix H, Table H-4. The listed PBAs, together with the situational awareness (provided by the operational monitoring) are the basis for the response phase SMP planning and implementation.</p>
Pre-Spill	<p>Activity: Stybarrow Decommissioning and Field Management</p> <p>The worst-case credible scenarios of hydrocarbon release for the activity have identified the following²⁹:</p> <ul style="list-style-type: none"> ▪ Commonwealth marine environment ▪ Ningaloo Coast³⁰ ▪ Rankin Bank and Glomar Shoal (Pilbara Offshore) <p>Refer to Appendix H, Table H-5 – baseline data available.</p> <p>Australian Marine Parks (AMPs) potentially affected includes:</p> <ul style="list-style-type: none"> ▪ Gascoyne AMP ▪ Ningaloo AMP ▪ Carnarvon Canyon AMP

²⁹ In the absence of spill modelling minimum time to contact a precautionary approach to the identification of sensitive receptor location contacted is presented.

³⁰ Ningaloo Coast includes the WHA, State Marine Park

Response Planning Assumptions	
	All the Australian Marine Parks (AMPs) are located in offshore waters where hydrocarbon exposure is possible for entrained hydrocarbons but only in the upper water column (0-20 m depth range, approximately).
In the Event of a Spill	<p>Receptor locations with >10 days to hydrocarbon contact, as well as the wider area, will be investigated and identified by the SMP team (in the Environment Unit of the CIMT) as the spill event unfolds and as the situational awareness provided by the OMPs permits delineation of the spill affected area (for example, updates to the spill trajectory tracking).</p> <p>The unfolding spill affected area predictions and confirmation of appropriate baseline data will determine the selection of receptor locations and SMPs to be activated in order to gather pre-emptive (pre-hydrocarbon contact) data. Refer to Appendix H, Section 2 for further details on the process for scientific monitoring plan implementation and delivery. The timing of SMP activation and mobilisation of the individual SMPs to undertake data collection will be decided and documented by the Woodside SMP team following the process outlined in the SMP Operational Plan.</p> <p>In the event key receptors within geographic locations potentially impacted after 10 days (following a spill event or commencement of the spill), a response phase SMP effort to collect baseline data would be addressed. SMP planning would assess where adequate and appropriate baseline data are not available and a response phase effort to collect baseline data for the following purposes:</p> <ul style="list-style-type: none"> ▪ Priority will be given to the collection of baseline data for receptors predicted to be within the spill affected area prior to hydrocarbon contact. The process is initiated with the investigation of available baseline and time to hydrocarbon contact (>10 days which is sufficient time to mobilise SMP teams and acquire data before hydrocarbon contact). ▪ Highly sensitive and/or valued habitats and communities in coastal waters will be prioritised for pre-emptive baseline surveys over open water areas of AMPs. <p>Collection of baseline data for receptors predicted to be outside the spill affected area so reference datasets for comparative analysis with impacted receptor types can be assessed post-spill.</p>
Baseline Data	<p>A summary of the spill affected area and receptor locations as defined by the EMBA for the petroleum activity worst case credible spill scenarios is presented in Section 8.2.</p> <p>The key receptors at risk by location and corresponding SMPs based on the EMBA for the petroleum activity are presented in Appendix H, Table H-4, as per the worst case credible spill event scenarios. This matrix maps the receptors at risk with their location and the applicable SMPs that may be triggered in the event of a Level two or three hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors. Receptor locations and applicable SMPs are colour coded to highlight possible time to contact based on receptor types and locations.</p> <p>The status of baseline studies relevant to the petroleum activity are tracked by Woodside through the maintenance of a SMP Environmental Baseline Database, as well as accessing external databases such as the Department of Water and Environmental Regulation (WA) Index of Marine Surveys for Assessment (IMSA)[1].</p>

10.4.4.3 Summary – Scientific Monitoring

The resulting scientific monitoring capability has been assessed against the petroleum activity worst case credible spill scenarios. The SMP assessment provides for a range of strategies and an ongoing approach to monitoring the response and operations to assess and evaluate the scale and extent of impacts. All known reasonably practicable control measures have been adopted with the cost and organisational complexity of these options determined to be moderate and the overall delivery effectiveness determined to be medium. The SMP’s main objectives can be met, with no additional, alternative or improved control measures providing further benefit.

[1] <https://biocollect.ala.org.au/imsa#max%3D20%26sort%3DdateCreatedSort>

10.4.4.3.1 Cultural Heritage

Monitoring of the potential impacts to Aboriginal heritage sites due to Level 2/3 hydrocarbon spills or spill response activities shall be coordinated by the Woodside First Nations team. This team will work with Aboriginal groups and relevant authorities (WA DoT, WA Department of Planning, Lands and Heritage) to identify, protect, and monitor Aboriginal heritage sites to meet the requirements of the *WA Aboriginal Cultural Heritage Act 2021*. The Woodside First Nations team will form a sub-team within the Woodside IMT Planning team. Information from this team will be provided to the IMT Environment Unit Leader to be integrated into the daily IAP and NEBA assessments.

Woodside has procedures for managing Aboriginal heritage sites that cover:

- the process for engaging with Aboriginal groups
- access to recorded heritage sites
- barriers to protect heritage sites
- the process for discovering new heritage sites
- management of information associated with Aboriginal heritage sites which include protocols that restrict access to this information
- the approvals process for land disturbance in relation to Aboriginal heritage sites
- reporting on incidents of unapproved access or disturbance of Aboriginal heritage sites.

Woodside seeks to consult with the relevant First Nations groups and will apply for approval from the relevant authority if sites are vulnerable to disturbances from spill response activities. These approvals manage and enforce conditions associated with oil spill response activities and ensure compliance to Aboriginal heritage commitments and regulatory requirements. These procedures provide the mechanism for Woodside heritage specialists to provide technical and professional advice regarding cultural heritage management of sites, including monitoring and protection requirements, to ensure compliance with legislation and relevant heritage protocols and agreements.

Scientific Monitoring	
Initiation Criteria	Refer to individual monitoring programs outlined in Appendix H , Table H-3.
Activation Time	Within two hours of forming the IMT.
Resources	Pre-approved vendors for environmental monitoring services. Logistics contractor (located in Exmouth) available to Woodside via existing contracts. Vessels available to Woodside via existing marine contracts. Vessels of opportunity available on local charter market in Exmouth or Onslow
Termination Criteria	Refer to individual monitoring programs outlined in Appendix H .

10.4.4.4 Oil Spill Preparedness

The resource capacity and ongoing scalability in the preparedness for environmental monitoring is outlined in **Appendix H**. Woodside maintains a list of pre-approved vendors who can be called upon at short notice to provide environmental monitoring services in the event of an oil spill.

Woodside’s scientific monitoring contractor provides monthly assurance on the availability of suitably qualified personnel via the SMP resourcing register. The status of the relevant contracts and the SMP monthly resourcing reports are also verified quarterly as part of the Hydrocarbon Spill Preparedness ‘Internal Control Environment’ (ICE) assurance process. SMP arrangements are tested annually.

10.4.4.5 Potential Environmental Impacts and Risks

Scientific monitoring will be labour intensive and involve deploying vessels, equipment and personnel. Scientific monitoring activities may also result in impacts to cultural heritage sites and shoreline habitats and fauna, such as

damage to intertidal, shoreline and emergent features from trampling by monitoring personnel and grounding/anchoring of monitoring vessels, and disturbance to fauna causing distress and/or changes in behaviour.

10.4.4.6 Environmental Performance – Scientific Monitoring

Table 10-8 provides the environmental performance outcomes, performance standards and measurement criteria for the Scientific Monitoring response strategy.

The initiation criteria, course of action, resources, supporting documentation and termination criteria associated with each response strategy are detailed above.

Table 10-8: Environmental Performance – Scientific Monitoring

Scientific Monitoring			
Environmental Performance Outcome	Woodside can demonstrate preparedness to stand up the SMP to quantitatively assess and report on the extent, severity, persistence and recovery of sensitive receptors impacted from the spill event.		
Control measure	Performance Standard	Measurement Criteria	
Woodside has an established and dedicated SMP team comprising the Environmental Science Team and additional Environment Advisers within the HSE Function.	10.1	SMP team comprises a pool of competent Environment Advisers (stand up personnel) who receive training regarding the SMP, SMP activation and implementation of the SMP on an annual basis	Training materials Training attendance registers Process that maps minimum qualification and experience with key SMP role competency and a tracker to manage availability of competent people for the SMP team including redundancy and rostering
Woodside has a contracted SMP service provider to supply scientific personnel and equipment to implement the SMPs. The service will resource a base capability of one team per SMP (SM01-SM10), see Appendix H , Table H-2 and as detailed in Woodside’s SMP standby contractor Implementation Plan. The availability of relevant personnel is reported to Woodside on a monthly basis via a simple report on the base-loading availability of suitable people for each of the SMPs comprising field work for data collection (SMP resourcing report register). In the event of a spill and the SMP is activated, the base-loading availability of scientific personnel will be provided by the SMP standby contractor for the individual SMPs and where gaps in resources are identified, the SMP standby contractor and Woodside will seek additional personnel (if needed) from other sources including Woodside’s Environmental Services Panel.	10.2	Woodside maintains the capability to mobilise personnel required to conduct scientific monitoring programs SM01 – SM10 (except desktop based SM08): Personnel are sourced through the existing standby contract with SMP standby contractor, as detailed within the SMP Implementation Plan. Scientific Monitoring Program Implementation Plan describes the process for standing up and implementing the scientific monitoring programs. SMP team stand up personnel receive training regarding the stand up, activation and implementation of the SMP on an annual basis	Hydrocarbon Spill Preparedness (HSP) Internal Control Environment tracks the quarterly review of the Oil Spill Contracts SMP resource report of personnel availability provided by SMP contractor on monthly basis (SMP resourcing report register). Training materials Training attendance registers Competency criteria for SMP roles SMP annual arrangement testing and reporting

Scientific Monitoring			
<p>Roles and responsibilities for SMP implementation are captured in Appendix H, Table H-2 and the SMP team (as per the organisational structure of the CIMT) is outlined in SMP Operational Plan. Woodside has a defined Crisis and Incident Management structure including Source Control, Operations, Planning and Logistics Sections to manage a spill response.</p> <p>SMP Team structure, interface with SMP standby contractor (standby SMP contractor) and linkage to the CIMT is presented in Appendix H, Figure H-1</p> <p>Woodside has a defined Command, Control and Coordination structure for Incident and Emergency Management that is based on the ICS framework.</p> <p>Woodside utilises an online Incident Management Information System (IMIS) to coordinate and track key incident management Sections. This includes specialist modelling programs, geographic information systems (GIS), as well as communication flows within the Command, Control and Coordination structure.</p> <p>SMP activated via the First Strike Plan (FSP)</p> <p>Step by step process to activation of individual SMPs provided in the SMP Operational Plan</p> <p>All decisions made regarding SMP logged in the online IMIS (SMP team members trained in using Woodside’s online Incident Management System)</p> <p>SMP component input to the CIMT Incident Action Plan (IAP) as per the identified CIMT timed sessions and the SMP IAP logged on the online IMIS</p> <p>Woodside provide awareness training on the activation and stand-up of the Scientific Monitoring Programme (SMP) for the Environment Advisers in Woodside who are listed on the SMP team on an annual basis.</p> <p>Woodside provide awareness training on the activation and</p>	10.3	<p>Woodside has established an SMP organisational structure and processes to stand up and deliver the SMP.</p>	<p>SMP Oil Spill Scientific Monitoring Operational Plan</p> <p>SMP Implementation Plan</p> <p>SMP annual arrangement testing and reporting</p>

Scientific Monitoring			
<p>stand-up of the Scientific Monitoring Programme (SMP) for the SMP standby contractor.</p> <p>Woodside co-ordinates an annual SMP arrangement testing exercise which the SMP standby contractor.</p>			
<p>Chartered and mutual aid vessels. Suitable vessels would be secured from the Woodside support vessels, regional fleet of vessels operated by Woodside and other operators and the regional charter market.</p> <p>Vessel suitability will be guided by the need to be equipped to operate grab samplers, drop camera systems and water sampling equipment (the individual vessel requirements are outlined in the relevant SMP methodologies (refer to Appendix H, Table H-3).</p> <p>Nearshore mainland waters could use the same approach as for open water. Smaller vessels may be used where available and appropriate. Suitable vehicles and machinery for onshore access to nearshore SMP locations would be provided by Woodside's transport services contract and sourced from the wider market.</p> <p>Dedicated survey equipment requirements for scientific monitoring range from remote towed video and drop camera systems to capture seabed images of benthic communities to intertidal/onshore surveying tools such as quadrats, theodolites and spades/trowels, cameras and binoculars (specific survey equipment requirements are outlined in the relevant SMP methodologies (refer to Appendix H, Table H-3).</p> <p>Equipment would be sourced through the existing SMP standby contract and if additional surge capacity is required this would be available through the other Woodside Environmental Services Panel Contractors and specialist contractors. SMP standby contractor can also address equipment redundancy through either individual or multiple suppliers. MoUs are in place with</p>	10.4	<p>Woodside maintains standby SMP capability to mobilise equipment required to conduct scientific monitoring programs SM01 – SM10 (except desktop based SM08):</p> <p>Equipment is sourced through the existing standby contract with SMP standby contractor as detailed within the SMP Implementation Plan.</p>	<p>Hydrocarbon Spill Preparedness (HSP) Internal Control Environment tracks the quarterly review of the Oil Spill Contracts SMP standby monthly resource reports of equipment availability provided by SMP contractor (SMP resourcing report register). SMP annual arrangement testing and reporting</p>

Scientific Monitoring			
<p>one marine sampling equipment company and one analytical laboratory (SMP resourcing report register).</p> <p>Availability of SMP equipment for offshore/onshore scientific monitoring team mobilisation is within one week to ten days of the commencement of a hydrocarbon release. This meets the SMP mobilisation lead time that will support meeting the response objective of 'to acquire, where practicable, the environmental baseline data prior to hydrocarbon contact required to support the post-response SMP'.</p>			
<p>Woodside's SMP approach addresses the pre-petroleum activity acquisition of baseline data for Pre-emptive Baseline Areas (PBAs) with ≤10 days if required following a baseline gap analysis process.</p> <p>Woodside maintains knowledge of Environmental Baseline data through:</p> <p>Documentation annual reviews of the Woodside SMP Baseline Environmental Studies Database, and specific activity baseline gap analyses.</p> <p>Accessing external databases such as the Department of Water and Environmental Regulation (WA) Index of Marine Surveys for Assessment (IMSA) (Appendix H, Section 2).</p>	10.5	<p>Annual reviews of environmental baseline data</p> <p>Petroleum activity specific Pre-emptive Baseline Area baseline gap analysis</p>	<p>Annual review/update of Woodside Baseline Environmental Studies Database</p> <p>Desktop review to assess the environmental baseline study gaps completed prior to EP submission</p>

Scientific Monitoring			
Environmental Performance Outcome	SMP plan to acquire response phase monitoring targeting pre-emptive data achieved.		
Control measure	Performance Standard		Measurement Criteria
Woodside's SMP approach addresses: Scientific data acquisition for PBAs >10 days to hydrocarbon contact and activated in the response phase and Transition into post-response SMP monitoring.	11.1	Pre-emptive Baseline Area (PBA) baseline data acquisition in the response phase If baseline data gaps are identified for PBAs predicted to have hydrocarbon contact in >10 days, there will be a response phase effort to collect baseline data. Priority in implementing SMPs will be given to receptors where pre-emptive baseline data can be acquired or improved. SMP team (within the Environment Unit of the CIMT) contribute SMP component of the CIMT Planning Section in development of the IAP.	Response SMP plan Woodside's online Incident Management System records SMP component of the Incident Action Plan.
	11.2	Post Spill contact For the receptors contacted by the spill in where baseline data are available, SMPs programs to assess and monitor receptor condition will be implemented post spill (i.e., after the response phase).	SMP planning document SMP Decision Log Incident Action Plans (IAPs)

Scientific Monitoring			
Environmental Performance Outcome	Implementation of the SMP (response and post-response phases)		
Control measure	Performance Standard		Measurement Criteria
Scientific monitoring will address quantitative assessment of environmental impacts of a level 2 or 3 spill or any release event with the potential to contact sensitive environmental receptors. The SMP comprises ten targeted environmental monitoring programs.	12.1	Implementation of SM01 SM01 will be implemented to assess the presence, quantity and character of hydrocarbons in marine waters during the spill event in nearshore areas	Evidence SM01 has been triggered: Documentation as per requirements of the SMP Operational Plan Woodside's online Incident Management System Records. SMP component of the IAP SMP data records from field

Scientific Monitoring			
<p>SMP supporting documentation: (1) Oil Spill Scientific Monitoring Operational Plan; (2) SMP Implementation Plan and (3) SMP Process and Methodologies Guideline.</p> <p>The Oil Spill Scientific Monitoring Operational Plan details the process of SMP selection, input to the IAP to trigger operational logistic support services.</p> <p>Methodology documents for each of the ten SMPs are accessible detailing equipment, data collection techniques and the specifications required for the survey platform support.</p> <p>The SMP standby contractor holds a Woodside SMP Implementation Plan detailing the activation processes, linkage with the Woodside SMP team and the general principles for the planning and mobilisation of SMPs to deliver the individual SMPs activated. Monthly resourcing report are issued by the SMP standby contractor (SMP resourcing report register). All SMP documents and their status are tracked via SMP document register.</p>	12.2	<p>Implementation of SM02-SM10</p> <p>SM02-SM10 will be implemented in accordance with the objectives and activation triggers as per Appendix H, Table H-3.</p>	<p>Evidence SMPs have been triggered:</p> <p>Documentation as per requirements of the SMP Operational Plan</p> <p>Woodside’s online Incident Management System Records.</p> <p>SMP component of the IAP</p> <p>SMP Data records from field</p>
	12.3	<p>Termination of SMP plans</p> <p>The Scientific Monitoring Program will be terminated in accordance with termination triggers for the SMPs detailed in Appendix H, Table H-3, and the Termination Criteria Decision-tree for Oil Spill Environmental Monitoring (Appendix H, Figure H-3):</p>	<p>Evidence of Termination Criteria triggered:</p> <p>Documentation and approval by relevant stakeholders to end SMPs for specific receptor types.</p>

10.4.5 Spill Response: Oiled Wildlife Response

Note: the WA DoT is the Control Agency and DBCA is the Jurisdictional Authority and lead organisation (under DoT) for Oiled Wildlife Response (OWR) within WA State waters. Woodside and AMSA are the Control Agencies for oiled wildlife response within Commonwealth waters from facility and vessel spills respectively.

10.4.5.1 Summary of Activity

OWR includes wildlife reconnaissance/surveillance, wildlife hazing, pre-emptive capture and the capture, cleaning, treatment, and rehabilitation of animals that have been oiled. It also includes the collection, necropsy, and disposal of deceased wildlife impacted by oil.

Reconnaissance/surveillance for oiled wildlife is a critical first-strike response and should be maintained throughout the oiled wildlife response. Adequate wildlife reconnaissance/surveillance is required to determine the amount of wildlife impacted and their locations, to inform and direct the oiled wildlife response.

Oiled Wildlife Response	
Initiation Criteria	Operational monitoring shows wildlife are contacted or are predicted to be contacted by a spill.
Activation Time	Within two hours of forming the IMT.
Resources	Oiled wildlife response equipment and trained personnel available via AMOSC, Mutual Aid and OSRL.

Oiled Wildlife Response	
	Logistics contractor (located in Exmouth) available to Woodside via existing contracts. Vessels available to Woodside via existing marine contracts. Vessels of opportunity available on local charter market in Exmouth or Onslow.
Termination Criteria	Oiling of wildlife has not been observed over a 48-hour period. Oiled wildlife has been successfully rehabilitated. Agreement is reached with Jurisdictional Authorities and stakeholders to terminate the incident response.

10.4.5.2 Oil Spill Preparedness

The key plan for OWR in WA is the WAOWRP (DBCA et al., 2022a). The WAOWRP establishes the framework for preparing and responding to potential or actual wildlife impacts during a spill and sets out the management arrangements for implementing an OWR in conjunction with the DoT *State Hazard Plan – Maritime Environmental Emergencies* (SHP-MEE). It is the responsibility of DBCA to administer the WAOWRP under the direction of the DoT. The WA OWR Manual (DBCA et al., 2022b) supports, and should be used in conjunction with, the WAOWRP. The purpose of the WA OWR Manual is to standardise the operating procedures, protocols and processes for an OWR during a spill event in WA waters, and to create alignment between the wildlife response processes and the overall incident response (DBCA et al., 2022b).

If a spill occurs in WA State waters or enters State waters, DBCA is the Jurisdictional Authority for wildlife, and for level 2/3 spills, will also lead the oiled wildlife response under the control of the DoT. DBCA is the State Government agency responsible for administering the *Biodiversity Conservation Act 2016* (BC Act), which has provisions for authorising activities that affect wildlife.

For level 1 spills in State waters, Woodside is required to take the role of Control Agency, including for wildlife response. It is, however, also an expectation for level 2/3 petroleum activity spills, Woodside will conduct the initial first-strike response actions for wildlife response and continue to manage those operations until DBCA is activated as the lead agency for wildlife response and formal handover occurs. Following formal handover, Woodside will function as a support organisation for the OWR and will be expected to continue to provide planning and resources as required.

Woodside retains specialist personnel to support and manage oiled wildlife operations, including trained and competent responders for deployment in Exmouth and Dampier. Additional personnel would be sourced through Woodside’s arrangements to support an oiled wildlife response as required.

French-McCay et al. (2002), based on a review of existing literature at the time, determined lethal thresholds for floating and shoreline oil for the external coating of wildlife to be 10 g/m² for floating, and 100 g/m² for shoreline accumulation. It should however be noted toxicity thresholds for wildlife are likely to be highly variable due to differences in species sensitivity, type of hydrocarbon, type of exposure (ingestion or external oiling), life-stage, and on-water versus land habitat.

For planning purposes, determination of wildlife priority protection areas is based on stochastic modelling of the worst-case spill scenarios at 10 g/m² for floating, and 100 g/m² for shoreline accumulation (acknowledging impacts to wildlife may occur at lower concentrations), the known presence of wildlife, and in consideration of the following:

- Presence of high densities of wildlife, threatened species, and/or endemic species with high site fidelity
- Greatest probability of shoreline accumulation
- Shortest timeframe to contact

Modelling for this activity does not predict contact at any receptors and thus there are no identified wildlife response priority areas. At the time of a spill, however, identification of wildlife response priority areas will be reassessed and should also take into consideration any key biological activities. Additional detail regarding species and their key biological activities within the vicinity of the activity are described in **Section 4** of this EP.

Further preparatory measures for OWR include determining the potential magnitude of wildlife impacted for the worst-case spill scenario. Spills that result in no shoreline contact are likely to result in limited opportunities to rescue wildlife given the behaviour and distribution of wildlife in the marine environment. Under these

circumstances the focus of the OWR would be on continued wildlife reconnaissance. Conversely, spills that result in shoreline accumulation are likely to result in greater impacts to wildlife and more opportunities for rescue. Using the WAOWRP guide for rating the wildlife impact of an oil spill (**Table 10-9**) (DBCA and DoT, 2022a) , and stochastic modelling for the worst-case spill scenarios, it is predicted that low wildlife impacts may occur.

Table 10-9: WAOWRP guide for rating wildlife impact of an oil spill (DBCA and DoT, 2022a)

Wildlife Impact Rating	Low	Medium	High
What is the likely duration of the wildlife response?	< 3 days	3-10 days	>10 days
What is the likely total intake of animals?	< 10	11-25	>25
What is the likely daily intake of animals?	0-2	2 to 5	>5
Are threatened species, or species protected by treaty, likely to be impacted, either directly or by pollution of habitat or breeding areas?	No	Yes – possible	Yes – likely
Is there likely to be a requirement for building primary care facility for treatment, cleaning and rehabilitation?	No	Yes – possible	Yes – likely

10.4.5.2.1 Response Arrangements

Where there is imminent or actual impact to wildlife, Woodside will activate the Wildlife Division and follow the oiled wildlife incident management framework and implementation plan outlined in the Woodside *Oiled Wildlife Operational Plan*.

In Commonwealth waters, Woodside will be responsible for the planning and implementation of the OWR in its entirety. In comparison to the shoreline, there are likely to be less wildlife impacted by an oil spill and limited opportunities to rescue wildlife, given the distribution and behaviour of animals in the open marine environment. At sea, continued wildlife reconnaissance, carcass recovery, sampling of carcasses that cannot be retrieved, and integration with scientific monitoring are more likely to be the focus of the OWR.

In State waters, Woodside will conduct the initial first-strike response actions for wildlife and continue to manage those operations until DBCA is activated as the lead agency for wildlife response and formal handover occurs. Following formal handover, Woodside will function as a support organisation for the OWR and will be expected to continue to provide planning and resources as required.

If a protracted response is likely, requiring preventative actions and/or wildlife rescue, and formal hand over to the Control Agency (in State waters) has not yet occurred, the Wildlife Division will be responsible for the development of the Wildlife Division portion of the IAP. Preventative actions, such as hazing, along with capture, intake and treatment require a higher degree of planning, approval (licenses) and skills and will be planned for and carried out under the IAP as outlined in the *Oiled Wildlife Operational Plan* and in accordance with the WAOWRP (DBCA, 2022a) and WA OWR Manual (DBCA, 20022b).

The oiled wildlife response technique targets key wildlife populations at risk within Commonwealth open waters and the nearshore waters.

10.4.5.3 Potential Environmental Impacts and Risks

OWR will require support vessels, aircraft, trained personnel and a suitable oiled wildlife facility for cleaning and aftercare treatment of oiled wildlife. Potential risks and impacts from implementing the OWR include:

- Non-oiled fauna may be accidentally driven into surface oil slicks or impacted shorelines during hazing and pre-emptive capture activities, resulting in increased numbers of oiled wildlife.
- During hazing and pre-emptive capture activities, oiled fauna may be accidentally driven into surface oil slicks or impacted shorelines rather than away from oil.
- Inappropriate equipment and capture techniques may result in distress, fatigue, injury, death, or the separation of faunal groups (adult/juvenile pairs).

- Inadequate or inappropriate cleaning and husbandry techniques and conditions may result in distress, disease, injury, or death.
- Captured wildlife may be released to inappropriate relocation areas.
- responding safely and efficiently to oiled wildlife
- protecting the health and welfare of wildlife threatened or impacted by oil
- coordinating field reconnaissance of at risk or impacted wildlife
- preventing or minimising exposure of wildlife to oil where possible
- recovering oiled wildlife safely and effectively
- prioritising the treatment of species of conservation value when resources are limited
- establishing an effective system for the treatment and rehabilitation of oiled wildlife
- releasing wildlife back into the wild as healthy, contributing members of a population
- identifying and removing dead oiled wildlife from the coastal environment.

10.4.5.4 Environmental Performance - Oiled Wildlife Response

Table 10-10 provides the environmental performance outcomes, performance standards and measurement criteria for the Oiled Wildlife Response strategy.

The initiation criteria, course of action, resources, supporting documentation and termination criteria associated with the response strategy are detailed above.

Table 10-10: Environmental Performance – Oiled Wildlife Response

Oiled Wildlife Response			
<i>Environmental Performance Outcome</i>	Oiled Wildlife Response is conducted in accordance with the Western Australian Oiled Wildlife Response Plan (WAOWRP, 2022) to ensure it is conducted in accordance with legislative requirements to house, release or euthanise wildlife under the <i>Biodiversity Conservation Act 2016</i> .		
<i>Response Strategy</i>	<i>Performance Standard</i>		<i>Measurement Criteria (Section 10.5)</i>
Wildlife response arrangements	13.1	Oiled Wildlife Operational Plan in place and utilised during a response to plan, coordinate, implement and terminate operations	1, 3A, 4
	13.2	Initiate a wildlife first strike response within 24 hours of confirmed or imminent wildlife contact as directed by relevant Operational Monitoring techniques (OM01-05) and in liaison with DBCA	1
Wildlife response equipment	14.3	Maintain contract with AMOSC for immediate access to oiled wildlife response equipment.	1, 3C, 3D, 4
	14.4	Maintain contract with OSRL to access additional oiled wildlife response equipment.	1, 3C, 3D, 4
Wildlife responders	15.1	Two Woodside Oiled Wildlife Team Members to supervise the oiled wildlife operations who have completed an Oiled Wildlife Response Management course.	1, 2, 3B
	15.2	Maintain contract with AMOSC for immediate access to trained oiled wildlife response specialists	1, 3B, 3C

Oiled Wildlife Response			
	15.3	Maintain contract with OSRL to access additional trained oiled wildlife response specialists	1, 3B, 3C
	15.4	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s).	1, 3A, 3B
Management of environmental impacts of response risks	16.1	Oiled wildlife operations (including hazing) would be implemented with advice and assistance from the Oiled Wildlife Advisor from the DBCA, and in accordance with the processes and methodologies described in the WA OWRP and the relevant regional plan.	1

10.4.6 Spill Response: Waste Management

10.4.6.1 Summary of Activity

In the event shoreline contact was made and as part of Shoreline Clean-Up, Woodside will use Veolia (North West Waste Alliance) who can collect, transport, treat and dispose of oil wastes generated by a hydrocarbon release.

Waste Management	
Initiation Criteria	Response activities that will be generating waste have been initiated.
Activation Time	Within two hours of forming the IMT.
Resources	Waste Service Provider and Logistics contractor available to Woodside via existing contracts.
Termination Criteria	All waste generated from the oil spill response has been stored, transported and disposed as per the regulatory requirements. Agreement is reached with Jurisdictional Authority to terminate the response.

10.4.6.2 Oil Spill Preparedness

Woodside's waste management contractor provides and maintains Woodside's Oil Spill Response Waste Management Operational Plan. This plan outlines the contractor's capabilities and capacity to deal with an oil spill scenario from Woodside activities. Woodside has arrangements in place with its waste management contractor for providing waste management services during a spill incident.

Woodside's waste management contractor has and continues to perform various emergency response tasks involving a wide range of hazardous materials. Hydrocarbon spills comprise most of the emergency response tasks, and the contractor has a wealth of experience in this area. In addition to a range of waste bin collection vehicles and trailer and tanker transport, it operates a fleet of vacuum-loading heavy vehicles, with capacities ranging from 3,000 to 25,000 L.

10.4.6.3 Potential Environmental Impacts and Risks

During an oil spill clean-up, the disposal of waste material must not pose any threat to the health and safety of people or the environment and must be performed in accordance with relevant State legislation. The type and amount of waste generated will depend on the spill itself and its location. It is important to note the volumes of oily waste recovered from shorelines may be significantly greater than the volume of oil spilled. Typical waste volumes generated will be influenced by a bulking factor:

- For shoreline clean-up there is a 1:10 increase of waste volume generation due to collection of sand and detritus from the high-water mark and surrounding environment.
- For oiled wildlife response, a volume of 1 m³ waste is estimated to be generated per individual animal.

Table 10-11 identifies the types of waste likely to be generated from oiled wildlife response (OWR) operations. Modelling does not predict any shoreline contact for this activity.

Table 10-11: Response strategies and their effect on waste generation

Response Strategy	Effect on Waste Stream	Type of Waste Generated
OWR	<p>The type of spilled oil will often have a profound effect on the amount of oily waste generated.</p> <p>Waste segregation and minimisation techniques are critical to ensure an efficient operation. These should be established at the initial recovery site and maintained right through to the final disposal site otherwise waste volumes will spiral out of control.</p> <p>Waste sites should be managed in such a way as to prevent secondary pollution.</p>	<ul style="list-style-type: none"> ▪ Oiled water ▪ Oiled personal protective equipment and consumables ▪ Animal carcasses ▪ Medical supplies

For any spill likely to produce significant amounts of waste, a Waste Management Plan will be developed to ensure:

- oily waste is properly handled and stored
- oil and oily debris are adequately segregated, treated, and stored at the point of collection
- oil and oily debris are rapidly collected and taken to designated sites for storage, treatment or disposal
- treatment or disposal practices ensure the waste poses no future threat to the environment.

In addition, the Waste Management Plan will identify how waste volumes will be minimised (**Table 10-12**)

Table 10-12: Waste Management Hierarchy

Hierarchy	Description
Reduction	Efficient response strategies selected for oil spill clean-up to ensure the minimum material is used and/or contaminated during the process.
Reuse	This is the reuse of an item for its original purpose (e.g., clean-up equipment should be cleaned and reused in place of disposable items). An example might be cleaning personal protective equipment so it can be reused.
Recovery	This is the production of marketable product for waste, such as taking waste oil to a refinery for conversion into other useable products. This will be directly affected by the quality of the recovered product (e.g., highly contaminated material is less likely to be suitable for recycling).
Refuse	Refuse is the final and least desirable option. If none of the above methods can be performed for whatever reasons, the waste must be disposed of effectively through some means. This may be the case for highly mixed wastes of oils, plastics, organic debris, water, sediments and others that cannot be separated.

The basis for such a Waste Management Plan will include a demonstration of:

- **Temporary on-site waste storage** – Care will be taken in selecting a location for a temporary waste handling base to allow for waste separation. Local authorities and waste management contractors will be consulted regarding the selection of suitable disposal routes, local regulations and may provide local facilities.
- **Segregation of waste** – Wherever possible, wastes will be segregated in accordance with the preferred segregation. It may be required to separate oil from associated water, sediment and debris, in order to minimise volumes. It is preferable this is not attempted on the spill site.

- **Onsite handling** – Attention will be given to preventing leaching or spillage of oil from vehicles or containers. Onsite handling equipment will be arranged by Woodside.
- **Offsite transport and storage** – Only State-licensed waste contractors will be used. Care will be taken that all vessels, vehicles or containers used for transporting oily wastes are effectively sealed and leak proof.
- **Waste treatment and disposal options** – The disposal method most appropriate in an incident will depend on several factors, including the nature and consistency of the waste, the availability of suitable sites and facilities, the costs involved and regulatory restrictions.
- **Waste separation** – Waste separation is usually performed offsite at a designated waste processing area.
- **Disposal** – Waste must be disposed of in accordance with State regulations.
- **Establishment of a field decontamination facility** – The size and complexity of field decontamination facilities required will depend on the character of the oil and the scale and nature of the clean-up being implemented.

10.4.6.3.1 *Monitoring and Reporting of Waste*

The Logistics Coordinator will be responsible for maintaining a Waste Management Register for all waste generated. The designated Waste Contractor will monitor, measure and record all waste streams that are disposed of onshore.

Measurement required by Waste Contractor Conditions include without limitation:

- types of waste collected (such as liquid oily waste)
- quantities of types of wastes collected (such as tonnes, litre)
- destination of waste collated (named authorised disposal facility)
- method of waste disposal (such as landfill, recycling)
- quantity of recyclable waste by type.

The Logistics FST will ensure adequate waste disposal records are being maintained by the Waste Contractor, and that the Waste Reference Number for all waste is communicated to the Logistics Coordinator for updating the Waste Management Register once waste is disposed.

Waste management reporting will comply with relevant local and national waste reporting requirements e.g., Environmental Protection (Controlled Waste) Regulations 2004

In addition to reporting all waste generated from a spill event, it will also be tracked upon mobilising the Waste Contractor using the Controlled Waste Tracking System (CWTS). This is an online user system provided by DBCA to enable electronic tracking of controlled waste loads across the state. Upon request, DBCA generates user profiles that enable access to components of the CWTS specific to waste generators, carriers and/or waste disposal sites (treatment plants) and enable them to complete their statutory obligations online.

10.4.6.4 Environmental Performance – Waste Management

Table 10-13 provides the environmental performance outcomes, performance standards and measurement criteria for the Waste Management response strategy.

The initiation criteria, course of action, resources, supporting documentation and termination criteria associated with each response strategy are detailed above.

Table 10-13: Environmental Performance – Waste Management

Waste Management			
Environmental Performance Outcomes	To minimise further impacts, waste will be managed, tracked and disposed of in accordance with laws and regulations.		
Response Strategy	Performance Standard		Measurement Criteria (Section 10.5)
Waste management	17.1	Contract with waste management services for transport, removal, treatment and disposal of waste.	1, 3A, 3B, 3C, 4
	17.2	Access to at least 200 m ³ of solid and liquid waste storage available within 5 days upon activation of 3 rd party contract, if required.	
	17.3	Recovered hydrocarbons and wastes will be transferred to licensed treatment facility for reprocessing or disposal.	
	17.4	Teams will segregate liquid and solid wastes at the earliest opportunity.	
	17.5	Waste management provider support staff available year-round to assist in the event of an incident with waste management as detailed in contract.	
	17.6	Open communication line to be maintained between IMT and waste management services to ensure the reliable flow of accurate information between parties.	1, 3A, 3B
	17.7	Waste management to be conducted in accordance with Australian laws and regulations.	1, 3A, 3B, 3C, 4
	17.8	Waste management services available and employed during response.	
Management of environmental impact of the response risks	18.1	All oiled wildlife response sites zoned and marked before operations commence to prevent secondary contamination and minimise the mixing of clean and oiled waste	1, 3A, 3B

10.4.7 Spill Response: Incident Management System

The Incident Management System is both a control measure and a measurement criterion. As a control measure the IMS function is to prompt, facilitate and record the completion of three key response planning processes detailed below. As a measurement criterion, the IMS records the evidence of the timeliness of all response actions included in the environmental performance standards and the plans used of the activity.

As the IMS does not directly remove hydrocarbons spilled into the marine environment there is no direct relationship to the response planning need.

10.4.7.1 Incident Action Planning

The CIMT will be required to collect and interpret information from the scene of the incident to determine support requirements to the site based IMT, develop an IAP and assist the IMT with the execution of that plan. The site-based Incident Commander (IC) may request the CIMT to complete notifications internally within Woodside, to persons/ organisations and government agencies as required. Depending on the type and scale of the incident either the CIMT IC or Deputy IC will be responsible for ensuring the development of the IAP. Incident Action

Planning is an ongoing process that involves continual review to ensure techniques to control the incident are appropriate to the situation at the time.

10.4.7.2 Operational NEBA process

In the event of a response Woodside will confirm the response techniques adopted at the time of EP/OPEP acceptance remain appropriate to reduce the consequences of the spill. This process verifies there is a continuing net environmental benefit associated with continuing the response technique through the operational NEBA process. This process manages the environmental risks and impacts of response techniques during the spill response, an operational NEBA will be undertaken throughout the response, for each operational period.

The operational NEBA will consider the risks and benefits of conducting and response activity. For example, if vessels are required for access to nearshore or onshore areas, anchoring locations will be selected to minimise disturbance to benthic habitats. Vessel cleanliness would be commensurate with the receiving environment. The operational NEBA will consider the risks and benefits of conducting other response techniques.

The operational NEBA process is also used to terminate a response. Using data from operational and scientific monitoring activities the response to a hydrocarbon spill will be terminated in accordance with the termination process outlined in the OPEA. In effect the operational NEBA will determine whether there is net environmental benefit to continue response operations.

10.4.7.3 Consultation engagement process

Woodside will ensure persons/organisations are engaged during the spill response in accordance with internal standards. This process requires that Woodside will:

Undertake all required notifications (including government notifications) for persons/ organisations in the region (identified in the FSP). This includes notification to mariners to communicate navigational hazards introduced through response equipment and personnel.

Identify and engage with relevant persons/organisations and continually assess and review.

10.4.7.4 Environmental Performance – Incident Management System (based on need)

Table 10-14: Environmental Performance – Incident Management System

Incident Management System			
<i>Environmental Performance Outcome</i>	To support the effectiveness of all other control measures and monitor/record the performance levels achieved.		
<i>Response Strategy</i>	<i>Performance Standard</i>		<i>Measurement Criteria (Section 10.5)</i>
Operational SIMA	19.1	Confirm that the response strategies adopted at the time of acceptance remain appropriate to reduce the consequences of the spill within 24 hours.	1, 3A
	19.2	Record the evidence and justification for any deviation from the planned response activities.	
	19.3	Record the information and data from operational and scientific monitoring activities used to inform the SIMA.	
Stakeholder engagement	20.1	Prompt and record all notifications (including government notifications) for persons/ organisations in the region are made.	

Incident Management System			
	20.2	In the event of a response, identification of relevant persons/ organisations will be re-assessed throughout the response period.	
	20.3	Undertake communications in accordance with: <ul style="list-style-type: none"> • Functional Support Team Guideline – Reputation • External Communication and Continuous Disclosure Procedure • External Stakeholder Engagement Procedure 	
Personnel required to support any response	21.1	Action planning is an ongoing process that involves continual review to ensure strategies to control the incident are appropriate to the situation at the time.	1, 2, 3B, 3C, 4
	21.2	A duty roster of trained and competent people will be maintained to ensure that minimum manning requirements are met all year round.	
	21.3	Immediately activate the IMT with personnel filling one or more of the following roles: <ul style="list-style-type: none"> • CIMT Incident Commander • CIMT Deputy Incident Commander • Operations Section Chief • Planning Section Chief • Logistics Section Chief • Documentation Unit Leader • Safety Officer • Environment Unit Leader • Human Resources Officer • Public Information Officer • Situation Unit Leader • Finance Section Chief • Source Control Section Chief 	
	21.4	Collect and interpret information from the scene of the incident to determine support requirements to the site based IMT, develop an IAP and assist with the execution of that plan.	
	21.5	S&EM advisors will be integrated into CIMT to monitor performance of all functional roles.	
	21.6	Continually communicate the status of the spill and support Woodside to determine the most appropriate response by delivering on the responsibilities of their role.	
	21.7	Follow the OPEA, Operational Plans, FSPs, support plans and the IAPs developed.	
	21.8	Contribute to Woodside’s response in accordance with the aims and objectives set by the Incident Commander.	

10.5 Measurement criteria for All Spill Response Techniques

Woodside ensures compliance with environmental performance outcomes and standards through four primary mechanisms. The performance tables aforementioned identify which of these four mechanisms monitors the readiness and records the effectiveness and performance of the control measures adopted.

1. The Incident Management System

The Incident Management System (IMS) supports the implementation of the Emergency & Crisis Management Procedure. The IMS provides a near real-time, single source of information for monitoring and recording an incident and measuring the performance of those control measures.

The Emergency & Crisis Management Procedure defines the management framework, including roles and responsibilities, to be applied to any size incident (including hydrocarbon spills). The organisational structure required to manage an incident is developed in a modular fashion and is based on the specific requirements of each incident. The structure can be scaled up or down.

The IAP process formally documents and communicates the:

- incident objectives
- status of assets
- operational period objectives
- response techniques (defined during response planning)
- the effectiveness of response techniques

The information captured in the IMS (including information from personal logs and assigned tasks/close outs) confirms the response techniques implemented remain appropriate to reduce the consequences of the spill. The system also records all information and data that can be used to support the site based IMT, development and the execution of the IAP.

2. The Security & Emergency Management Competency Dashboard

The Security and Emergency Management (S&EM) competency dashboard records the number of trained and competent responders that are available across Woodside, and some external providers, to participate in a response.

This number varies depending on expiry of competency certificates, staff attrition, internal rotations, leave and other absences. As such the Dashboard is designed to identify the minimum manning requirements and to identify sufficient redundancy to cater for the variances listed above.

Figure 10-1 shows the minimum manning numbers for the different hydrocarbon spill response roles and the number of qualified persons against those roles.

Woodside's pool of trained responders is composed of but not limited to personnel from the following organisations:

- Woodside internal
- AMOSC core group
- AMOSC
- OSRL
- Marine Spill Response Corporation (MSRC)
- AMSA
- Woodside contracted workforce

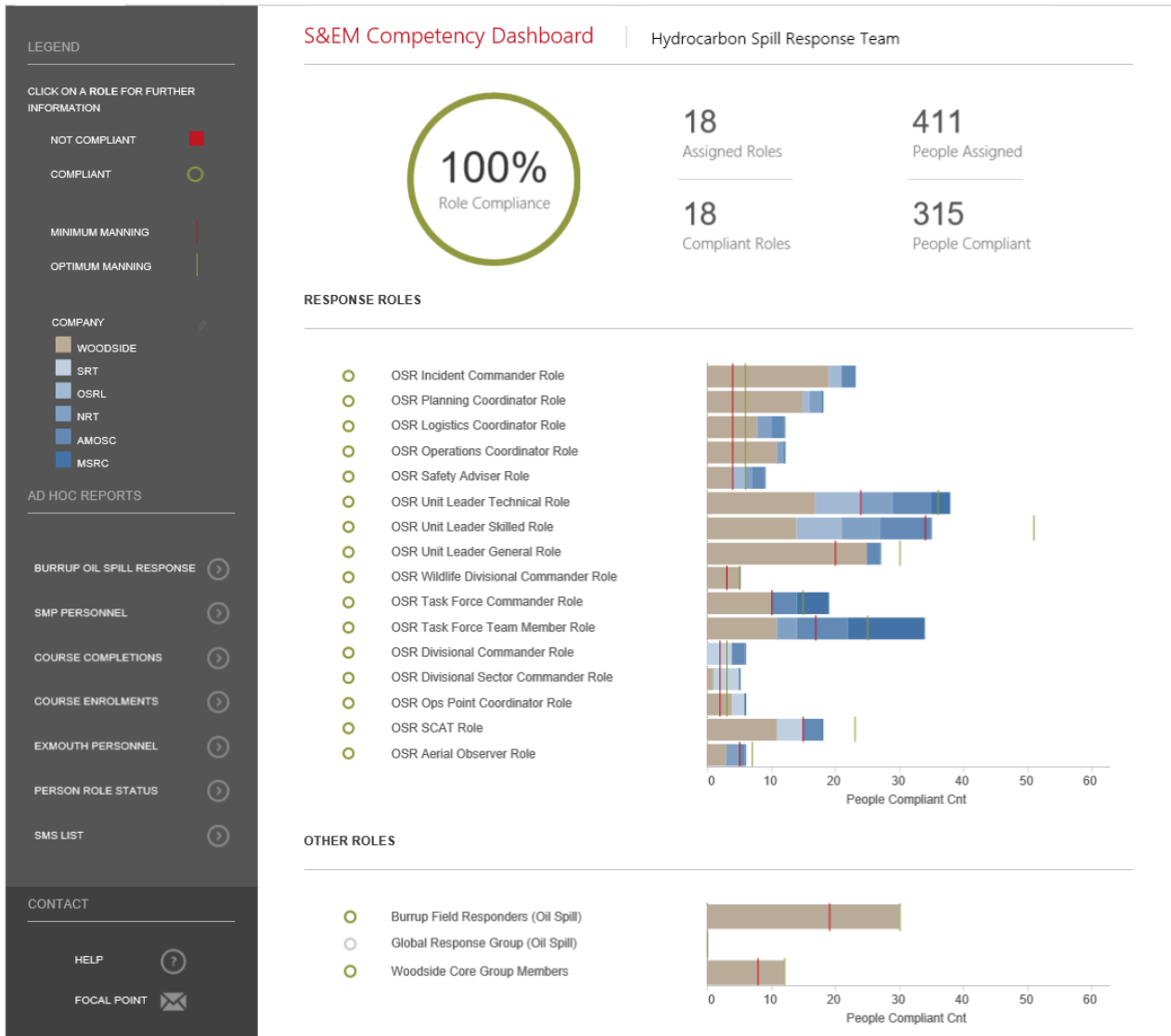


Figure 10-1: Example screen shot of the Hydrocarbon Spill Preparedness competency dashboard

The Dashboard is one of Woodside’s key means of monitoring its readiness to respond. It also shows Woodside can meet the requirements of the environmental performance standard that relate to filling certain response roles.

Figure 10-2 shows a deeper dive into the Operations Point Coordinator role and the training modules required to show competence.

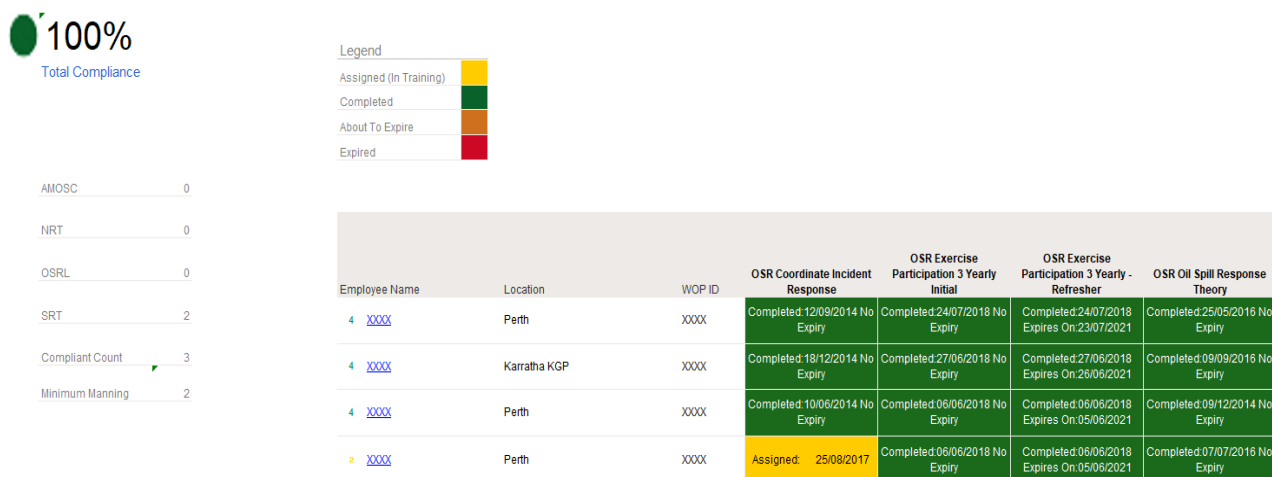


Figure 10-2: Example screen shot for the Operations Point Coordinator role

3. The Hydrocarbon Spill Preparedness ICE Assurance Process

The Hydrocarbon Spill Response Team has developed a Hydrocarbon Spill Preparedness and Response Internal Control Environment (ICE) process to align and feed into the Woodside Management System Assurance process for hydrocarbon spill. The process tracks compliance over four key control areas:

- A. **Plans** – Ensures all plans (including: OPEA, FSPs, operational plans, support plans and TRPs) are current and in line with regulatory and internal requirements.
- B. **Competency** – Ensures the competency dashboard is up to date and there are the minimum competency numbers across CIMT, CMT and hydrocarbon spill response roles. The hydrocarbon spill training plan and exercise schedule, including testing of arrangements is also tracked. The Testing of Arrangements (TOA) register tracks the testing of all hydrocarbon spill response arrangements, key contracts and agreements in place with internal and external parties to ensure compliance.
- C. **Capability** – Tracks and monitors capability that could be required in a hydrocarbon incident, including but not limited to: integrated fleet³¹ vessel schedule, dispersant availability, rig/vessels monitoring, equipment stockpiles, tracking buoy locations and the CIMT duty roster.
- D. **Compliance & Assurance** – Ensures all regulator inspection outcomes are actioned and closed out, the global legislation register is up to date and the key assurance components are tracked and managed. Assurance activities (including Audits) conducted on memberships with key Oil Spill Response Organisations (OSROs) including AMOSC and OSRL are also tracked and recorded in the ICE.

The ICE assurance process records how each commitment listed in the performance tables above is managed to ensure ongoing compliance monitoring. The level of compliance can be reviewed in real time and is reported on a monthly basis through the S&EM Function.

The completion of the assurance checks (over and above the ICE process) is also applied via the Woodside Integrated Risk & Compliance System (WiRCS) and subject to the requirements of Woodside’s Provide Assurance Procedure.

4. The Hydrocarbon Spill Preparedness and Response Procedure

This procedure sets out how to plan and prepare for a liquid hydrocarbon spill to the marine environment. (Note, this procedure does not apply to scenarios relating to gas releases in the marine environment).

This procedure details the:

- Requirement for an OPEP to be developed, maintained, reviewed, and approved by appropriate regulators (where applicable) including:
- Defining how spill scenarios are developed on an activity specific basis

³¹ The Integrated fleet consists of vessels from multiple operators that have been contracted to Woodside to undertake a number of duties including hydrocarbon spill response

- Developing and maintaining all hydrocarbon spill related plans
- Ensuring the ongoing maintenance of training and competency for personnel
- Developing the testing of spill response arrangements
- Maintaining access to identified equipment and personnel
- Planning for hydrocarbon spill response preparedness
- Accountabilities for hydrocarbon spill response preparedness
- Spill training requirements
- Requirements for spill exercising / testing of spill response arrangements
- Spill equipment and services requirements.

The procedure also details the roles and responsibilities of the dedicated Woodside Hydrocarbon Spill Preparedness team. This team is responsible for:

- Assuring that Woodside hydrocarbon spill responders meet competency requirements
- Establishing the competency requirements, annual training schedule and a training register of trained personnel
- Establishing and maintaining the total numbers of trained personnel required to provide an effective response to any hydrocarbon spill incident
- Ensuring equipment and services contracts are maintained
- Establishing OPEPs
- Establishing OPEAs
- Priority response receptor determination
- ALARP determination
- Ensuring compliance and assurance is undertaken in accordance with external and internal requirements.

10.6 Environmental Risk Assessment of Selected Response Techniques

The implementation of response techniques may modify the impacts and risks identified in the EP and response activities can introduce additional impacts and risks from response operations themselves. Therefore, it is necessary to complete an assessment to ensure these impacts and risks have been considered and specific measures are put in place to continually review and manage these further impacts and risks to ALARP and Acceptable levels. A simplified assessment process has been used to complete this task which covers the identification, analysis, evaluation and treatment of impacts and risks introduced by responding to the event.

10.6.1 Identification of Impacts and Risks from Implementing Response Techniques

Each of the control measures can modify the impacts and risks identified in the EP. These impacts and risks have been previously assessed within the scope of the EP. Refer to **Section 10.4** for details regarding how these risks are being managed. They are not discussed further in this section.

- atmospheric emissions
- routine and non-routine discharges
- physical presence, proximity to other vessels (shipping and fisheries)
- routine acoustic emissions vessels
- lighting for night work/navigational safety
- invasive marine species
- collision with marine fauna.

Additional impacts and risks associated with the control measures not included within **Section 10.4** include:

- vessel operations and anchoring
- presence of personnel on the shoreline
- additional stress or injury caused to wildlife
- waste generation.

10.6.2 Analysis of Impacts and Risks from Implementing Response Techniques

Table 10-15 compares the adopted control measures for this activity against the environmental values that can be affected when they are implemented.

Table 10-15: Analysis of risks and impacts

	Environmental Value						
	Soil & groundwater	Marine sediment quality	Water quality	Air quality	Ecosystems/habitat	Species	Socio-economic
Monitor and evaluate		✓	✓		✓	✓	
Source control		✓	✓	✓	✓	✓	✓
Oiled wildlife response					✓	✓	
Scientific monitoring	✓	✓	✓	✓	✓	✓	✓
Waste management	✓			✓	✓	✓	✓

10.6.3 Evaluation of Impacts and Risks from Implementing Response Techniques

10.6.3.1 Vessel Operations and Anchoring

During the implementation of response techniques, where water depths allow, it is possible that response vessels will be required to anchor (e.g., during shoreline surveys or oiled wildlife response where access may be limited). The use of vessel anchoring will be minimal and likely to occur when the impacted shoreline is inaccessible via road. Anchoring in the nearshore environment of sensitive receptor locations will have the potential to impact coral reef, seagrass beds and other benthic communities in these areas. Recovery of benthic communities from anchor damage depends on the size of anchor and frequency of anchoring. Impacts would be highly localised (restricted to the footprint of the vessel anchor and chain) and temporary, with full recovery expected.

10.6.3.2 Presence of Personnel on the Shoreline

Presence of personnel on the shoreline during shoreline surveys or oiled wildlife response operations could potentially result in disturbance to wildlife and habitats. During the implementation of response techniques, it is possible that personnel may have minimal, localised impacts on habitats, wildlife and coastlines. The impacts associated with human presence on shorelines during shoreline surveys and response operations may include:

- damage to vegetation/habitat, especially in sensitive locations such as mangroves and turtle nesting beaches, to gain access to areas of shoreline oiling
- damage or disturbance to wildlife during shoreline surveys

- removal of surface layers of intertidal sediments (potential habitat depletion)
- excessive removal of substrate causing erosion and instability of localised areas of the shoreline
- compaction of sediments.

Any impacts are expected to be localised with full recovery expected.

10.6.3.3 Additional Stress or Injury caused to Wildlife

Additional stress or injury to wildlife could be caused through the following phases of a response:

- capturing wildlife
- transporting wildlife
- stabilisation of wildlife
- cleaning and rinsing of oiled wildlife
- rehabilitation (e.g., diet, cage size, housing density)
- release of treated wildlife.

Inefficient capture techniques have the potential to cause undue stress, exhaustion or injury to wildlife, additionally pre-emptive capture could cause undue stress and impacts to wildlife when there are uncertainties in the forecast trajectory of the spill. During the transportation and stabilisation phases there is the potential for additional thermoregulation stress on captured wildlife. Additionally, during the cleaning process, it is important personnel undertaking the tasks are familiar with the relevant techniques to ensure that further injury and the removal of water proofing feathers are managed and mitigated. Finally, during the release phase it's important that wildlife is not released back into a contaminated environment.

10.6.3.4 Waste Generation

Implementing the selected response techniques will result in the generation of the following waste streams that will require management and disposal:

- liquids (recovered oil/water mixture), recovered during oiled wildlife response
- semi-solids/solids (oily solids), collected during oiled wildlife response
- debris (e.g., seaweed, sand, woods, plastics), collected during oiled wildlife response.

If not managed and disposed of correctly, wastes generated during the response have the potential for secondary contamination similar to that described above, impacts to wildlife through contact with or ingestion of waste materials and contamination risks if not disposed of correctly onshore.

Cutting back vegetation prior to impact could minimise the amount of contaminated organic material and thus reduce the amount of oiled/hazardous waste to be handled. However, removal of vegetation also allows more extensive penetration of oil into the substrate and may lead to habitat loss. Any impacts are expected to be localised with full recovery expected.

10.6.4 Treatment of Impacts and Risks from Implementing Response Techniques

In respect of the impacts and risks assessed the following treatment measures have been adopted as reflected in **Section 10.4**. It must be recognised that this environmental assessment is seeking to identify how to maintain the level of impact and risks at levels that are ALARP and of an acceptable level rather than exploring further impact and risk reduction. It is for this reason that the treatment measures identified in this assessment will be captured in Operational Plans, TRPs, and/or the FSP.

10.6.4.1 Vessel Operations and Access in the Nearshore Environment

If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic primary producer habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore benthic environments with a preference for areas of sandy seabed where they can be identified (**Spill Response Performance Standard (PS) 9.1**).

Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines (**PS 9.3**).

Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves (**PS 9.4**).

10.6.4.2 Presence of Personnel on the Shoreline

Shoreline access route (foot, car, vessel and helicopter) with the least environmental impact identified will be selected by a specialist in SCAT operations (**PS 9.2**).

10.6.4.3 Additional Stress or Injury caused to Wildlife

Oiled wildlife operations (including hazing) would be implemented with advice and assistance from the Oiled Wildlife Advisor from the DBCA and in accordance with the processes and methodologies described in the WA OWRP and the relevant regional plan (**PS 16.1**).

10.6.4.4 Waste Generation

All shorelines zoned and marked before clean-up operations commence to prevent secondary contamination and minimise the mixing of clean and oiled sediment and shoreline substrates (**PS 18.4**).

10.7 Hydrocarbon Spill Response As Low As Reasonably Practicable Assessment

10.7.1 Demonstration of As Low As Reasonably Practicable

In considering the approach to demonstrate ALARP for an emergency event, the focus is upon examining ways in which it is possible to mitigate the consequences of the event, particularly what is reasonable to have in place in terms of preparedness for a spill. In the case of demonstrating ALARP for oil spill response, it is necessary to define the objective for which the ALARP option will be evaluated.

This section provides detailed ALARP assessment of the adequacy of resourcing available to support the suitable response spill strategies listed in **Table 10-2**. In developing the performance standards that apply to each response strategy, Woodside has considered the level of performance that is reasonable to achieve for each control measure and the ‘effectiveness’ of the control measure.

The effectiveness of the control measure is assessed by considering:

- availability: the status of availability to Woodside
- functionality: a measure of functional performance
- reliability: the probability that the control will function correctly
- survivability: the potential of the control measure to survive an incident
- independence/compatibility: the degree of reliance on other systems and/or controls to perform its function.

This follows the definitions in NOPSEMA’s *Control Measures and Performance Standards Guidance Note* (NOPSEMA, 2020a), with rankings provided in **Table 10-16**.

Table 10-16: Evaluation Criteria for Ranking Effectiveness

Evaluation Criteria	Effectiveness Ranking	
	Low	High
Availability	Woodside does not have equipment/resources on standby, or contracts, arrangements or MoUs in place for providing equipment and resources.	Woodside has equipment/resources on standby, and/or contracts, arrangements, or MoUs in place for providing equipment and resources.

Evaluation Criteria	Effectiveness Ranking	
	<i>Low</i>	<i>High</i>
	Woodside has internal processes and procedures in place to expedite timely provision of equipment/resources.	
Functionality	Implementation of the control measure does not greatly reduce the risk/impact.	Implementation of the control measure has material difference in reducing the risk/impact.
Reliability	The control measure is not reliable (for example, has not been tried and tested in Australian waters) and/or low assurance can be given to its success rate and effectiveness.	The control measure is reliable (for example, has been tried and tested in Australian waters) and/or high assurance can be given to its success rate and effectiveness.
Survivability	Control measure has a low operating timeframe and will need to be replaced regularly throughout its operational period in order to maintain its effectiveness.	Control measure has a high operating timeframe and will not need to be replaced regularly throughout its operational period in order to maintain its effectiveness.
Independence/Compatibility	Control measure relies on other control measures being in place and/or the control measure is not compatible with other control measures in place.	Control measure does not depend on other control measures being in place and/or control measure can be implemented in unison with other control measures.

Each control was then evaluated by considering the environmental benefit gained from implementation compared with its practicability (e.g., control effectiveness, cost, response capacity and implementation time) to determine if the control was either:

- accepted and implemented, or
- rejected.

This traffic light system is used in the ALARP demonstration tables where the ‘do nothing’ option is rejected, along with a Scalable Option that generally involves mobilising spill response resources and equipment to Exmouth or Dampier. Accepted controls in all the ALARP demonstration tables indicate those that would be implemented as part of the response. **Section 10.6** provides Woodside’s ALARP assessment for resourcing for spill response strategies.

10.7.1.1 ALARP Summary

The Operational NEBA is the primary tool used during spill response to select strategies that have the least net impact to environmental strategies and an overall net environmental benefit. The NEBA response strategy evaluation process is a decision support tool that is used as a spill occurs to help interpret spill response activities, particularly where both positive and negative impacts have the potential to arise, in which case the sensitivity with the higher priority becomes the preferred response option. For spill response under the control of Woodside, the IMT applies the Operational NEBA process to identify the response options that are preferred for the situation oil type and behaviour, environmental conditions, direction of plume and protection priority of sensitive receptors.

This will ensure, at the strategy level, the response operations reduce additional environmental impacts to ALARP. Spill response activities will be conducted in offshore and coastal waters using vessels and aircraft. The greatest potential for additional impacts from implementing spill response is considered to be to wildlife in offshore waters from oiled wildlife response activities, and to shoreline habitats and fauna receptors within shallow waters or on shorelines from shoreline clean-up activities.

Given the types of activities considered appropriate to responding to a worst-case spill and the scale of the activity, standard control measures adopted by Woodside for spill response to reduce the level of additional impacts are considered to reduce these impacts to ALARP. This includes working with the relevant Control Agency for spill response and applying the process and standards, such as for oiled wildlife response as included within the WA Oiled Wildlife Response Plan.

A detailed ALARP evaluation was performed by Woodside to determine what additional control measures could be implemented to reduce the level of impacts and risks. No additional controls, beyond those identified during the detailed ALARP assessment can reasonably be implemented to further reduce the risk of impacts. The impacts and risks of the spill response activities are therefore considered to be reduced to ALARP.

10.7.2 Demonstration of Acceptability

Woodside considers a range of factors when determining that a level of impact and risk to the environment is broadly acceptable, as summarised in **Table 10-17**.

Table 10-17: Demonstration of acceptability for spill response strategies

Acceptability Criteria	Acceptability Criteria	Demonstration
Codes and Standards	Is the impact or risk being managed in accordance with relevant Australian or international legislation, Ministerial Conditions or standards?	Impacts and risks associated with spill response activities are well understood through available information. Control measures implemented will minimise the potential impacts from spill response activities to protected areas and their values, and to species identified in Recovery Plans and Conservation Advice.
Ecologically Sustainable Development (ESD)	Is the proposed impact consistent with the principles of ESD?	Woodside performs petroleum activities in a manner consistent with its Our Values and Code of Business Conduct. In determining the level of acceptability of spill response activities, and guided by the Our Values of sustainability, Woodside has identified, assessed and controlled risks to minimise environmental impacts. Woodside considers this approach is consistent with the principles of ESD.
Internal Context		
Woodside Our Values and HSE Management System compliance	Is the proposed impact or risk consistent with the requirements of Woodside Our Values, Petroleum Standard and HSE Management Systems?	Spill response will comply with Woodside Our Values and management systems.
Professional judgement	Is the impact or risk being managed in accordance with industry best practice?	Controls identified in this plan are consistent with industry best practice and guidelines. Accepted controls that will be implemented are tabulated in Section 10.4 and 10.6 .
ALARP	Are there any further reasonable and practicable controls that can be implemented to further reduce the impact or risk?	All reasonable and practicable controls have been assessed (refer to tables in Section 10.4 and 10.6). Woodside considers control measures and performance standards for spill response activities reduce the impacts and risks to ALARP.
External Context		
Environmental best practice	Are controls in place to manage the impacts and risk to the environment that are commensurate with the nature and scale of any environmental sensitivities of the receiving environment?	Controls are in place to manage the impacts and risks associated with implementing response activities in the event of a spill. Woodside will apply a range of controls to minimise the potential environmental impacts and risks to protected areas and their values, and to protected species and their habitat. The environmental performance outcomes, performance standards and

Acceptability Criteria	Acceptability Criteria	Demonstration
		measurement criteria that determine whether the outcomes and standards have been achieved are commensurate with the environmental significance of the receiving environment.
Relevant persons views	Do relevant persons have concerns/issues, and, if so, have controls been implemented to manage their concerns/issues?	Relevant persons have been consulted about the petroleum activity (Section 5) and no concerns have been raised regarding this aspect. In the event of a spill, Woodside will liaise with relevant regulatory bodies (such as DoT, DNP, DBCA, AMSA) to ensure ongoing consultation regarding spill response information.

10.7.2.1 Acceptability Summary

Woodside will ensure all preventative controls are in place to reduce the risk of a hydrocarbon spill occurring during petroleum activity and the likelihood of the loss of hydrocarbons is extremely low when considering industry statistics and the preventative controls in place. Woodside has performed extensive planning and assessment when selecting the spill response options presented, based on:

- the nature and scale of the worst-case hydrocarbon pollution events
- the accessibility, availability and location of appropriate spill response equipment
- the predicted timings of contact of hydrocarbons and loadings of hydrocarbons to sensitive environmental receptors, and the capability and scalability of spill response resources.

Woodside has a sound knowledge of the relevant environmental values and sensitivities at risk from hydrocarbon spill events and indirectly from spill response activities, particularly the shallow water and coastal benthic habitats of Ningaloo Reef and Muiron Islands, from work partly funded by Woodside.

Woodside has assessed the spatial and temporal impacts and risks and environmental benefit gained from implementing spill response activities, which would be considered daily as part of the Operational NEBA. Where Woodside is the Control Agency, the decision to implement spill response activities will be made by the Woodside Incident Commander, taking into account the outcomes of the daily Operational NEBA, which will incorporate daily situational awareness reports from Monitor and Evaluate, as well through liaison with DoT.

The proposed control measures for preventing and minimising the risks and impacts associated with implementing spill response activities are comprehensive and consistent with all relevant codes and standards and good oilfield practices. No concerns have been raised by relevant persons regarding response activities. Woodside regularly consults with relevant persons about its operations and activities, providing them with sufficient and reasonable opportunities to raise any new concerns or issues for the duration of this petroleum activity. Woodside considers control measures presented for spill response activities reduce impacts and risks to an acceptable level.

Woodside acknowledges that uncertainty on cultural values may remain; however, the Ongoing Program on Traditional Custodian Feedback (EPO 14 and C1.10) has been developed to enable Woodside to manage potential uncertainty on the impacts and risks to cultural values which may be identified at any time during Woodside’s activities via ongoing dialogue with Traditional Custodians.

11 Implementation Strategy

In accordance with Regulation 14 of the Environment Regulations, the EP must contain an implementation strategy for the 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.

11.1 Systems, Practices and Procedures

11.1.1 Woodside PetDW HSE Management System

The Woodside PetDW 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 Woodside PetDW HSE Management System is to aspire to zero harm to people, communities and the environment, and achieve leading industry practice. The structure of the Woodside PetDW HSE Management System is hierarchical (**Figure 11-1**).

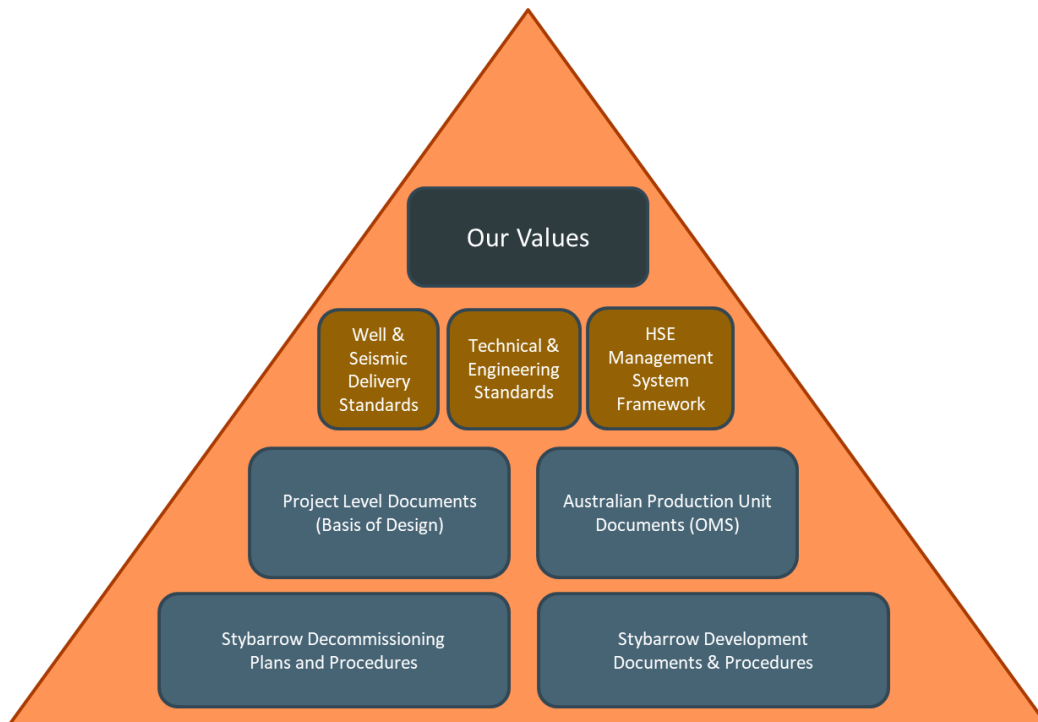


Figure 11-1: Woodside (PetDW) HSE Management System

The documents referred to in **Figure 11-1** 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 11-1** 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.

The Stybarrow decommissioning activities 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 has been designed to meet the environmental aspects of the Woodside 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

11.2 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 11-1**. It is the responsibility of all Woodside employees and contractors to ensure the Woodside Our Values (**Appendix A**) are applied in their areas of responsibility.

Table 11-1: Key personnel and environmental responsibilities

Title	Environmental Responsibilities
<i>Office-based Roles</i>	
Woodside VP of Projects Australia	<ul style="list-style-type: none"> ▪ Has Technical Authority and manage team of projects and decommissioning professionals. ▪ Ensures sufficient resources are provided to implement the commitments made in this EP
Woodside Decommissioning Delivery Manager (or equivalent)	<p>The Woodside Decommissioning Delivery Manager reports to the Woodside VP of Projects Australia and is primarily responsible for:</p> <ul style="list-style-type: none"> ▪ Supervise decommissioning operations, including management of change. ▪ Be accountable for developing the decommissioning engineering and associated programs. ▪ Ensure compliance with company policies, standards and statutory requirements.
Woodside Project Manager	<p>The Woodside Project Manager Reports to the Woodside Decommissioning Delivery Manager and is primarily responsible for:</p> <ul style="list-style-type: none"> ▪ Monitor and manage the activity so it is undertaken as per the relevant standards and commitments in this EP. ▪ Notify the Woodside Environment Adviser of any scope changes in a timely manner. ▪ Liaise with regulatory authorities as required. ▪ Review this EP as necessary and manage change requests.

Title	Environmental Responsibilities
	<ul style="list-style-type: none"> ▪ Ensure all project and support vessel crew members complete an HSE induction. ▪ Verify that contractors meet environmental related contractual obligations. ▪ Confirm environmental incident reporting meets regulatory requirements (as outlined in this EP) and Woodside's Health, Safety and Environment Reporting and Investigation Procedure. ▪ Monitor and close out corrective actions identified during environmental monitoring or audits.
Woodside Environment Manager	<p>The Woodside Environment Manager oversees the implementation of environmental requirements in the EP including:</p> <ul style="list-style-type: none"> ▪ Ensure compliance with Our Values and Management Standards, this EP and regulatory responsibilities. ▪ Ensure incident prepared and response arrangement meet Woodside and regulatory requirements. ▪ Ensure environmental incidents or breaches of EPOs, EPSs or MCs are reported in line with Woodside's incident reporting requirements.
Woodside Environment Adviser	<p>The Woodside Environment Adviser reports to the Woodside Environment Manager and manages day to day environmental requirements of the activities including:</p> <ul style="list-style-type: none"> ▪ Verify relevant Environmental Approvals for the activities exist prior to commencing activity. ▪ Track compliance with performance outcomes and performance standards as per the requirements of this EP. ▪ Prepare environmental component of relevant Induction Package. ▪ Assist with the review, investigation and reporting of environmental incidents. ▪ Ensure environmental monitoring and inspections/audits are undertaken as per the requirements of this EP. ▪ 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. ▪ Monitor and close out corrective actions (Compliance Action Register (CAR)) identified during environmental monitoring or audits. ▪ Provide advice to relevant Woodside personnel and contractors to assist them to understand their environment responsibilities. ▪ Liaise with primary installation contractors to ensure communication and understanding of environment requirements as outlined in this EP and in line with Woodside's Compass values and management systems.
Woodside Corporate Affairs Adviser	<ul style="list-style-type: none"> ▪ Prepare and implement the Relevant Persons Consultation Plan for the petroleum activity. ▪ Report on relevant persons consultation. ▪ Ongoing liaison and notification as required as per Section 5
Woodside Marine Assurance Superintendent	<ul style="list-style-type: none"> ▪ Conducts relevant audit and inspection to confirm vessels comply with relevant Marine Orders and Woodside Marine Charters Instructions requirements to meet safety, navigation and emergency response requirements.
Woodside CIMT Incident Commander	<p>On receiving notification of an incident, the Woodside CIMT Incident Commander shall:</p> <ul style="list-style-type: none"> ▪ establish and take control of the CIMT and establish an appropriate command structure for the incident

Title	Environmental Responsibilities
	<ul style="list-style-type: none"> ▪ assess situation, identify risks and actions to minimise the risk ▪ communicate impact, risk and progress to the Crisis Management Team and stakeholders ▪ develop the incident action plan (IAP) including setting objectives for action ▪ approve, implement and manage the IAP ▪ communicate within and beyond the incident management structure ▪ manage and review safety of responders ▪ address the broader public safety considerations ▪ conclude and review activities.
Contractor Project Manager	<ul style="list-style-type: none"> ▪ Prepare, maintain, and implement Contractor HSE Management Plans and Procedures ▪ Ensure compliance with this EP, regulatory and HSE responsibilities relevant to their scope of work ▪ Maintain clear lines of communication with the Woodside Project Manager
Decommissioning Logistics Lead	<ul style="list-style-type: none"> ▪ Provide oversight of contractor(s) implementing the waste management arrangements ▪ Ensure compliance with the Recycling and Disposal Management Plan
Field-based Roles	
Vessel Contractor Representative	<p>The Vessel Contractor Representative reports to the Contractor Project Manager and is responsible for:</p> <ul style="list-style-type: none"> ▪ Be responsible for managing and supervising decommissioning engineering activities in the field site ▪ Ensure field activities are conducted according to the approved programme requirements ▪ Monitor and audit the field activities to ensure compliance with this EP and the regulatory and HSE responsibilities ▪ Manage change during field activities ▪ Disseminate project-specific environmental compliance requirements as required ▪ Ensure environmental incidents or breaches of EPOs, EPSs or MCs are reported and recorded in line with Woodside’s incident reporting requirements ▪ Comply with this EP, and all regulatory and project obligations applicable to their assigned role
Vessel Master	<p>The Vessel Master has overall responsible and is in charge of all aspects of a vessels operation and works closely with the Vessel Contractor Representative during activities including:</p> <ul style="list-style-type: none"> ▪ Manage activities and safety on-board vessel for the duration at sea, and operate under Woodside Marine Controls, relevant Commonwealth Acts and Regulations ▪ Ensure vessel operations are undertaken as per this EP and any approval conditions ▪ Conduct SOPEP drills as per vessel’s schedule ▪ Report environmental incidents or breaches of EPOs, EPSs or MCs on vessel, in line with Woodside’s incident reporting requirements ▪ Report recordable incidents ▪ Comply with this EP, and all regulatory and project obligations applicable to their assigned role

Title	Environmental Responsibilities
Vessel Logistics Coordinators	<ul style="list-style-type: none"> ▪ Ensure waste is managed on the relevant project vessel and sent to shore as per the relevant Waste Management Plan.
Woodside Site Representative/ Engineer	<p>The Woodside Site Representative reports to the Woodside Project Manager and primary responsibilities include:</p> <ul style="list-style-type: none"> ▪ Ensure activities are undertaken as detailed in this EP. ▪ Ensure the management measures made in this EP are implemented on the vessel ▪ Ensure environmental incidents or breaches of objectives, standards or criteria outlined in this EP, are reported as per the Woodside Corporate Event Notification Matrix ▪ Verify HSE improvement actions identified during the project are implemented where practicable ▪ Ensure periodic environmental inspections are completed.
All crew	<p>All crew comply with orders of the Vessel Master and Vessel Contractor Representative and responsibilities include:</p> <ul style="list-style-type: none"> ▪ Work in accordance with accepted HSE obligations and practices ▪ Comply with this EP, and all regulatory and project obligations applicable to their assigned role ▪ Report any hazardous condition, near miss, unsafe act, accident or environmental incident immediately to their supervisor ▪ Report sightings of marine fauna and marine pollution ▪ Attend HSE meetings and training and drills when required ▪ Understand their obligation to 'stop-the-job' due to HSE concerns ▪ Comply with this EP, and all regulatory and project obligations applicable to their assigned role
Onshore Processing and Recycling Yards Site Supervisor	<ul style="list-style-type: none"> ▪ Directly accountable for establishing the worksite to ensure that all activities can be conducted in a safe manner. ▪ Conduct daily project meetings as required. ▪ Promote a proactive approach to the project disposal activities. ▪ Responsible for ensuring all associated project documentation is in place and signed off accordingly. ▪ Conduct weekly toolbox meetings to address project issues and to provide information on safety related matters. ▪ Ensure that all incidents are reported to line management. ▪ Ensure that all personnel working on the site are competent or receive training as deemed necessary to the statutory requirements to carry out the tasks for which they are assigned. ▪ Document all reported incidents and assist in investigations. ▪ Complete KPI's as set by management.

11.3 Woodside IMS Risk Assessment Process

11.3.1 Objective and scope

To minimise the potential risk of introducing IMS as a result of the Petroleum Activities Program, all applicable vessels and immersible equipment will be subject to Woodside's IMS risk assessment process (unless exempt as outlined below). The objective of the risk assessment process is to identify the level of threat a contracted vessel, or immersible equipment might pose if no additional risk reduction management measures are implemented. This

allows Woodside (and its contractors) to apply management options that are commensurate to the identified level of risk.

In context of the activities specified in **Section 3**, the IMS risk assessment process does not apply to the following:

- Vessels or immersible equipment that do not plan to enter the IMS Management Area (IMSMA)³² or operational areas defined in environmental approvals
- 'New build' vessels launched less than 14 days prior to mobilisation
- Vessels or immersible equipment which have been inspected by a suitably qualified IMS inspector who has classified the vessels or immersible equipment as acceptably low risk no more than 14 days prior to mobilisation
- Locally sourced vessels or immersible equipment from within the Pilbara locally sourced zone³³. Vessels, or immersible equipment are defined as Locally Sourced when the same supply facilities/port have been used since their last IMS inspection, full hull clean in dry dock or application of antifouling coating (AFC)³⁴.

11.3.2 Risk assessment process

Woodside's IMS risk assessment process was developed with regard to the national biofouling management guidelines for the petroleum production and exploration industry and guidelines for the control and management of a ships' biofouling to minimise the transfer of invasive aquatic species (IMO Guidelines, 2011).

In order to effectively evaluate the potential for vessels and immersible equipment to introduce IMS, a risk assessment process has been developed to score and evaluate the risk posed by each Project vessel, or immersible equipment planning to undertake activities within the operational areas. The risk assessment process considers a range of factors, as listed in **Table 11-2** and **Table 11-3**.

The IMS risk assessments will be undertaken by a trained environment adviser who has completed relevant Woodside IMS training or by a qualified and experienced IMS inspector. A QA/QC process is implemented for all Woodside conducted IMS risk assessments where a secondary trained environment adviser verifies the assessment to minimise the risk of misapplication and errors within the risk assessment process.

Table 11-2: Key factors considered as a part of the risk assessment process for vessels

Factors	Details
Vessel type	The risk of IMS infection varies depending on the type of vessel undertaking the activity. A higher risk rating is applied for more complex, slow-moving vessels (e.g., dredges) in comparison to simple vessels (e.g., crew transfer vessel).
Recent IMS inspection and cleaning history, including for internal niches	In the case of biofouling on external hull niches, different risk ratings are applied dependant on whether out-of-water or in-water IMS inspections by qualified IMS inspectors and cleaning (if required) have been undertaken prior to contract commencement. If an IMS inspection (and clean if required) has not been undertaken in the past six months (from the time of contract commencement), the highest risk factor is applied. The risk factor then lessens for vessels as the time between inspection and mobilisation reduces.
Out-of-water period before mobilisation	A risk reduction factor can be applied for vessels that are hauled out and then mobilised as deck cargo or by road during mobilisation, therefore becoming air dried over an extended period. Risk reduction factor increases with exposure time out of water.

³² IMSMA is based on current legal framework and includes all nearshore waters around Australia, extending from the lowest astronomical tide mark to 12 nm from land (including Australian territorial islands). The IMSMA also includes all waters within 12 nm from the 50 metre depth contour outside of the 12 nm boundary (i.e. Submerged reefs and atolls).

³³ The Pilbara Zone includes Port, nearshore and offshore movements between Exmouth and Port Headland (excluding high environmental value areas, World Heritage Areas, Commonwealth Marine Reserve Sanctuary Zones and State Marine Management Areas and Marine Parks).

³⁴ Vessels and immersible equipment can still be classified as locally sourced even if the AFC application occurred in a different port provided the amount of time between AFC application and departure to the locally sourced area (i.e. period of time in waters <12nm/50m water depth) did not exceed consecutive 7 days or the period of time the vessel or immersible equipment has spent within the locally sourced zone exceeds 1 year (i.e. the risk of introducing a species from a different location has already passed).

Factors	Details
Age and suitability of AFC at mobilisation date	AFC manufacturers provide a range of coatings, each designed to avoid premature coating failure if it is correctly applied and matched to the vessel's normal speeds and activity profile (i.e., proportion of time spent stationary or below three knots), and its main operational region (i.e., tropical, sub-tropical temperate). If the AFC type is deemed to be unknown, unsuited or absent, the highest risk value is applied. If the AFC type is suitable the risk factor applied reduces with age since application.
Internal treatment systems	A risk reduction factor applied if the vessel has an internal biological fouling control system in place at the time of assessment, or evidence of manual dosing.
Vessel origin and proposed area of operation	Differing risk ratings are assigned in relation to the climatic relationship between the vessel's origin and the proposed climatic region of the proposed area of operation. Highest risk rating is applied to similar climatic regions.
Number of stationary/slow speed periods >7 days	A risk factor is calculated based on the number of 7 day periods that the vessel has operated at stationary or at low speed (less than three knots) in port or coastal waters which is any waters less than 50 metres deep outside 12 nautical miles from land or any waters within 12 nautical miles of land. The greater the number of periods the higher the risk factor applied.
Region of stationary or slow periods	A further multiplier is applied depending on the location of the stationary/slow speed periods. The highest risk rating applied if the stationary or slow speed periods occurred within ports or coastal waters of the same climatic region,
Type of activity – contact with seafloor.	The potential for the introduction of IMS varies on the planned vessel activity taking place. Those activities that come in contact with sediments and thus have the potential to accumulate and harbour IMS in areas such as hoppers (dredges) and spud cans (drilling rigs) are considered to have a greater risk of infection.

Table 11-3: Key factors considered as a part of the risk assessment process for immersible equipment

Factors	Details
Region of deployment since last thorough clean, particularly coastal locations	Climatic region of use since last overhaul, thorough cleaning or prolonged period out of water (> 28 day). Highest risk rating is applied to similar climatic regions. Activities occurring in nearshore areas (less than 50 meters deep and/or within 12 nautical miles from land) are given the highest risk rating.
Duration of deployments	Maximum duration of deployment (maximum time in water) since last overhaul or thorough cleaning. The longer the period of immersion the higher the risk rating applied.
Duration of time out of water since last deployment	A further risk reduction factor can be applied for immersible equipment that has been out of the water for an extended period.
Transport conditions during mobilisation	If the equipment is stored in damp conditions then a high risk factor is applied, while if equipment is stored in dry and well ventilated (low humidity) conditions then a low risk factor is applied.
Post-retrieval maintenance regime.	A risk reduction factor is applied if the equipment/item of interest is routinely washed, cleaned, checked and/or disassembled between project sites. While a higher risk rating is applied where no routine cleaning occurs.

Following implementation of the risk assessment process, vessels and/or immersible equipment are classified as

one of three risk categories, as defined below.

- 'Low' – Low risk of introducing IMS of concern and hence no additional management required, or management options have been applied to reduce the risk.
- 'Uncertain' – Risk of introducing IMS is not apparent and as such the precautionary approach is adopted, and additional management options may be required.
- 'High' – High risk of introducing IMS means additional management options are required prior to this vessel mobilising to the operational areas.

Following the allocation of a 'low' risk rating for a vessel or immersible equipment, the information provided by the vessel operator for the purposes of risk assessment must be confirmed prior to mobilisation. For vessels or equipment classified as posing an 'uncertain' or 'high' theoretical risk, a range of management options are presented to reduce this theoretical risk to acceptable levels and achieve a low-risk status. These management options have been developed with the intention of reducing IMS risk to levels that are as low as reasonably practicable (i.e., ALARP). It is a flexible approach that allows for a range of management actions to be tailored for a specific vessel movement. These will be assessed on a case-by-case basis and may include, but not limited to, the following:

- Inspection (desktop, in-water or dry dock) by a suitably qualified and experienced IMS inspector to verify risk status. Where practicable, the inspection shall occur within seven days (but not more than 14 days) prior to final departure to the operational areas.
- In-water or dry dock cleaning of the hull and other niche areas. This is typically applied where the risk assessment outcome is High risk driven by the age of the AFC on the vessel and its time spent in similar climatic region ports.
- Treatment of vessels internal seawater systems. This is typically applied in isolation for vessels with AFC applied to their hull within the last twelve months and where subsequent assessment through the process achieves a low-risk rating.
- Limiting the duration that the vessel spends within the IMSMA to a maximum of 48 hours (cumulative entries)³⁵. This is applicable for Uncertain risk vessels only.
- Reject the vessel.

Project vessels and immersible equipment are required to be a low risk of introducing IMS prior to entering the operational areas or commencing activities defined under this EP.

11.4 Unexpected Finds Procedure

In the event of the discovery of what appears to be Underwater Cultural Heritage (defined as 'any trace of human existence that has a cultural, historical or archaeological character and is located under water'); the following Unexpected Finds Procedure will apply:

- All activities with the potential to impact the suspected Underwater Cultural Heritage must cease immediately. Retain all records of the potential Underwater Cultural Heritage, including any imagery, description and location.
- Person who discovers the heritage object must inform the Activity Supervisor.
- Activity Supervisor must notify Woodside's Principal Heritage Adviser.
- Woodside will specify an appropriate buffer around the potential Underwater Cultural Heritage, taking into consideration the nature and scale of the potential Underwater Cultural Heritage and the activities to be managed.
- No seabed disturbance may occur within the buffer area around the potential Underwater Cultural Heritage until approved by Woodside's Principal Heritage Adviser.

³⁵48 hours is considered an appropriate and ALARP management control, as it significantly reduces the potential for any IMS associated with a vessel to successfully establish suitable habitat within the IMSMA. This reduction of risk is primarily achieved via a direct reduction of the propagule pressure associated with a particular vessel movement.

- Woodside’s Principal Heritage Adviser must notify a qualified underwater archaeologist and provide all available documentation of the potential Underwater Cultural Heritage.
- If the potential Underwater Cultural Heritage appears to be Aboriginal Underwater Cultural Heritage, Woodside’s Principal Heritage Adviser must notify the appropriate Traditional Custodians to determine whether it is a heritage site and if so, how the site should be managed.
- If the potential Underwater Cultural Heritage appears to be a shipwreck or aircraft that has been wrecked for more than 75 years, or is otherwise reportable under Section 40 of the UCH Act, Woodside’s Principal Heritage Adviser must notify the Minister responsible for the UCH Act, the DCCEEW underwater archaeology section through the Australasian Underwater Cultural Heritage Database, and the Western Australian Museum.
- If the suspected heritage object includes human remains, Woodside’s Principal Heritage Adviser must also notify:
 - The Australian Federal Police (phone: 131 444) of the location of the remains, that the remains are likely to be historic or Aboriginal in origin, and that it may be appropriate that Traditional Custodians and a maritime archaeologist are present during any handling of the remains; and
 - The Office of the Federal Environment Minister in accordance with Section 20 of the ATSIHP Act.
- Work must not recommence in the vicinity of the potential heritage object until Woodside’s Principal Heritage Adviser provides written approval. Woodside’s Principal Heritage Adviser must only provide written approval once agreed management measures are implemented consistent with approvals and legislation or where the potential Underwater Cultural Heritage is confirmed to not be Underwater Cultural Heritage.

11.5 Waste Management

The petroleum activity will generate wastes from the operation of vessels (e.g., garbage), the removal of equipment from WA-32-L, and the decontamination of the equipment onshore. The nature and scale of wastes generated directly by the petroleum activity are described in **Section 7.8.2**.

Woodside and its contractors have developed waste management plans that will be implemented during the petroleum activity. These include:

- vessel-specific waste management plans
- a recycling and disposal management plan for recovered equipment.

Vessel-specific waste management plans are standard requirements onboard vessels contracted by Woodside. These plans are routinely implemented by vessel contractors to meet relevant requirements, such as Marine Orders giving effect to MARPOL.

The Recycling and Disposal Management Plan details how the recovered equipment will be stored and disposed of. The plan details how waste materials will be managed in a safe and environmentally responsible way. The plan will be implemented by Woodside’s contractors under Woodside’s supervision, which will operate the onshore equipment recovery and decontamination facilities. These facilities are planned to be used for several of Woodside’s decommissioning projects in the region and are planned to be in the Pilbara Regional Waste Management Facility in Onslow. An existing recycling facility at Karratha will be used to process recyclable materials. This yard has a weigh bridge, with which all received recyclable materials will be weighed.

The hierarchy of waste shown in **Figure 7-8** will be applied to all wastes within the scope of the Recycling and Disposal Management Plan.

Material will be tracked as they move from offshore recovery through the onshore receipt assessment, cleaning, decontamination, de-energising, and disposal stages. The Recycling and Disposal Management Plan requires a tracking and reporting system be implemented to record details of all recovered equipment being recycled or disposed of.

Decontamination of potentially hazardous material will consist of:

- testing to quantify hazardous material and confirm the removal of hazards after decontamination
- internal flushing of structures and flexibles as required for processing and disposal
- collection of the wastewater and extraction of contaminated material

- disposal of contaminated waste through authorised facilities
- relocation of cleaned equipment from hazardous to non-hazardous storage locations for handover to the disposal pathway.

Metallic material, which comprises most of the equipment to be recovered, will be processed following decontamination (if required) by breaking it down into heavy melting scrap-sized pieces for recycling. Tooling will be developed to process mixed material to separate metallic equipment from other materials (e.g., separating plastic coatings from flowline steel carcasses). All metallic material, including metal recovered from mixed materials, is expected to be recycled. The complexity of recovering and recycling plastics is variable depending on the nature of the plastics; some plastic material may not feasibly be recycled.

Waste management arrangements have a target of recycling at least 90% by mass of recovered equipment.

Material that cannot practicably be recycled will be disposed of in accordance with its waste classification. Non-hazardous waste, such as marine growth, general wastes, and plastics not suitable for recycling will be sent to landfill. Hazardous waste will be packaged, stored, transported, and disposed of in accordance with the Environmental Protection (Controlled Waste) Regulations 2004. Hazardous wastes are expected to be entombed with a dedicated long-term hazardous waste disposal facility.

The Project Waste Management Plan meets relevant requirements such as:

- classification and management of wastes in accordance with Schedule 1 of the Western Australian Environmental Protection (Controlled Waste) Regulations
- the Minamata Convention
- the Basel Convention.

11.6 Training and Competency

11.6.1 Competence, Environmental Awareness and Training

Woodside's PetDW HSE Management System establishes the foundation for continual improvement through applying consistent requirements across all aspects of petroleum activity, including establishing and maintaining the competencies for personnel, and providing training to promote expected behaviours.

For Woodside contractors, environmental risks in contracts are managed in accordance with the requirements outlined in the PetDW HSE Management Standard. As part of the contractor management process, the project vessel contractor's Environmental Management System is assessed to ensure it is aligned with the Our Values and the PetDW HSE Management Standard, and meets all commitments made in this EP. If, and wherever, the Contractor's Management System is found to be deficient, it will need to be modified before mobilisation to site.

All personnel on the project vessels are required to be competent and suitably trained to perform their assigned positions. This may be in the form of 'On the Job' or external training. Contractors are responsible for identifying training needs and keeping records of training. Environmental awareness inductions (**Section 11.6.3**) are required for all offshore personnel as part of their induction to performing petroleum activity. Information on the roles and responsibilities of all personnel will be provided during the environmental awareness inductions and toolbox meetings where relevant. A copy of the EP will be made available to all personnel upon request.

11.6.2 Operational Control

The petroleum activity is identified, planned and carried out in accordance with relevant legislation, EP commitments and internal environment standards and procedures. Verification processes are in place to ensure these controls and requirements are being implemented to reduce significant risks to acceptable levels. Some of the key operational controls include:

- task specific toolbox talks, Job Safety Analysis (or equivalent), and associated procedures / checklists
- contractors' vessel-specific procedures
- scheduled Preventative Maintenance Systems, tracked through dedicated software packages
- environmental inspections by the HSE personnel.

11.6.3 Specific Environmental Awareness

Inductions are provided to all relevant personnel, including contractor personnel such as vessel crew, before mobilising to or on arriving at the activity location. This induction covers the HSE requirements and environmental information specific to the location of the petroleum activity. The induction will include environmental information about:

- Description of the activity.
- Ecological and socio-economic values of the activity location.
- Regulations relevant to the activity.
- Woodside's PetDW HSE Management System Framework – Out Values (0)
- EP importance/structure/implementation/roles and responsibilities.
- Main environmental aspects/hazards and potential environmental impacts and related performance outcomes.
- Waste management requirements and process (segregation of landfill, recycle and hazardous wastes) and location of bins
- Oil spill preparedness and response.
- Monitoring and reporting on performance outcomes and standards using MC.
- Incident reporting.

All personnel who undertake the induction are required to sign an attendance sheet, which is retained by the project vessel contractors.

A copy of this EP is provided to the project vessel contractor before performing the petroleum activity.

11.6.4 Contractor Management

For Woodside contractors, HSE risks in contracts are managed in accordance with the requirements outlined in the Woodside (PetDW) HSE Management Standard. As part of the contractor management process, Woodside implements pre- and post-contract award processes and activities aimed at ensuring contracts consistently and effectively cover the management of HSE in line with Woodside's HSE-related Our Requirements, the Woodside Our Values, and the Woodside (PetDW) HSE Standard.

While Woodside (PetDW) HSE Management System applies to the way Woodside execute its responsibilities under this EP, operational control of the project vessels remains the responsibility of the vessel contractor and shall be managed in accordance with Woodside Contractor Management Systems.

11.6.5 Emergency and Spill Response

Woodside's arrangements for spill response are common across its Australian operating assets and activities to ensure the controls are consistent. The overall objective of testing these arrangements is to ensure that Woodside maintains an ability to respond to a hydrocarbon spill, specifically to:

- ensure relevant responders, contractors and key personnel understand and practise their assigned roles and responsibilities
- test response arrangements and actions to validate response plans
- ensure lessons learned are incorporated into Woodside's processes and procedures and improvements are made where required.

If new response arrangements are introduced, or existing arrangements significantly amended, additional testing is undertaken accordingly. If the project vessels leave the field for extended periods, additional testing will be undertaken when it returns to routine operations. Additional activities or activity locations are not anticipated to occur; however, if they do, testing of relevant response arrangements will be undertaken as soon as practicable

In addition to the testing of response capability described in **Section 11.11.11**, up to eight formal exercises are planned annually, across Woodside, to specifically test arrangements for responding to a hydrocarbon spill to the marine environment.

11.6.6 Marine Operations and Assurance

Woodside's marine assurance is managed by the Marine Assurance Team of the Logistics Function in accordance with Woodside's Marine Offshore Vessel Assurance Procedure. The Woodside process is based on industry standards and consideration of guidelines and recommendations from recognised industry organisations such as Oil Companies International Marine Forum and International Maritime Contractors Association.

Woodside's Marine Offshore Assurance process is mandatory for all vessels (other than Tankers and Floating Production Storage and Offloading vessels) that are chartered directly by or on behalf of Woodside, including for short-term hires (i.e., <3 months in duration). It defines applicable marine offshore assurance activities, ensuring all vessel operators operate seaworthy vessels that meet the requirements for a defined scope of work and are managed with a robust Safety Management System.

The process is multi-faceted and encompasses the following marine assurance activities:

- Safety Management System Assessment
- Dynamic Positioning (DP) System Verification
- Vessel Inspections
- Project support for tender review, evaluation and pre/post contract award.

Vessel inspections are used to verify actual levels of compliance with the company's Safety Management System, the overall condition of the vessel and the status of the planned maintenance system onboard. Woodside Marine Assurance Specialist will conduct a risk assessment on the vessel to determine the level of assurance applied and the type of vessel inspection required.

Methods of vessel inspection may include, and are not limited to:

- Woodside Marine Vessel Inspection
- OCIMF OVID Inspection
- IMCA CMID Inspection
- Marine Warranty Survey

Upon completion of the marine assurance process, to confirm that identified concerns are addressed appropriately and conditions imposed are managed, the Woodside Marine Assurance Team will issue the vessel a statement of approval. Should a vessel not meet the requirements of the Woodside Marine Offshore Vessel Assurance Process and be rejected, there does exist an opportunity to further scrutinise the proposed vessel.

Where a vessel inspection and/or OVMSA Verification Review is not available and all reasonable efforts based on time and resource availability to complete a vessel inspection and/or OVMSA Verification Review are performed (i.e., short-term vessel hire), the Marine Assurance Specialist Offshore may approve the use of an alternate means of inspection, known as a risk assessment.

11.6.7 Risk Assessment

Woodside conducts a risk assessment of vessels where either an OVMSA Verification Review and/or vessel inspection cannot be completed. This is not a regular occurrence and is typically used when the requirements of the assurance process are unable to be met or the processes detailed are not applicable to a proposed vessel(s). The Marine Vessel Risk Assessment will be conducted by the Marine Assurance Specialist, where the vessel meets the short-term hire prerequisites.

The risk assessment is a semi-quantitative method of determining what further assurance process activity, if any, is required to assure a vessel for a particular task or role. The process compares the level of management control a vessel is subject to against the risk factors associated with the activity or role.

Several factors are assessed as part of a vessel risk assessment, including:

- Management control factors:
 - Company audit score (i.e., management system)

- vessel HSE incidents
- vessel Port State Control deficiencies
- instances of Port State Control vessel detainment
- years since previous satisfactory vessel inspection
- age of vessel
- contractors' prior experience operating for Woodside.
- Activity risk factors:
 - people health and safety risks (a function of the nature of the work and the area of operation)
 - environmental risks (a function of environmental sensitivity, activity type and magnitude of potential environment damage (e.g., largest credible oil spill scenario))
 - value risk (likely time and cost consequence to Woodside if the vessel becomes unusable)
 - reputation risk
 - exposure (i.e., exposure to risk based on duration of project)
 - industrial relations risk.

The acceptability of the vessel or requirement for further vessel inspections or audits is based on the ratio of vessel score to activity risk. If the vessel management control is not deemed to appropriately manage activity risk, a satisfactory company audit and/or vessel inspection may be required before awarding work.

The risk assessment is valid for the period a vessel is on hire and for the defined scope of work.

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

11.7.1 Monitoring Environmental Performance

Woodside and its contractors will perform a program of periodic monitoring during the petroleum activities - starting at mobilisation of each activity and continuing through the duration of each activity-to-activity completion. This information will be collected using the tools and systems outlined below, developed based on the EPOs, controls, standards and MC in this EP. The tools and systems will collect, as a minimum, the data (evidence) referred to in the MC in **Sections 7, 8 and 10.5**.

11.7.1.1 Source-based Impacts and Risks

The tools and systems to monitor environmental performance, where relevant, will include:

- daily reports which include leading indicator compliance
- periodic review of waste management and recycling records
- use of contractor's risk identification program that requires personnel to record and submit safety and environment risk observation cards routinely (frequency varies with contractor)
- collection of evidence of compliance with the controls detailed in the EP relevant to offshore activities by the Woodside Offshore HSE Adviser or Woodside Site Representative (other compliance evidence is collected onshore)
- environmental discharge reports that record volumes of planned and unplanned discharges, to ocean and atmosphere
- monitoring of progress against the Projects function scorecard for KPIs
- internal auditing and assurance program as described in **Section 11.7.3**.

Throughout this activity, Woodside will continuously identify new source-based risks and impacts through the Monitoring and Auditing systems and tools described above and in **Section 11.7.3**.

11.7.1.2 Waste Monitoring of Decommissioned Infrastructure

All recovered infrastructure from the Stybarrow field will be classified in accordance with Commonwealth and Western Australian hazardous waste definitions and requirements and aligned with Basel Convention and Minamata Convention. The infrastructure will be transported to an onshore waste processing and treatment facility and will be properly manifested. Waste manifests will typically include the following information:

- Manifest identification number
- Quantity (m³/Kg)
- Waste description
- Waste container(s) number and description
- Date of shipment
- Final Destination Description (e.g.: recycling, landfill, etc.)
- Transporter data and waste acceptance declaration
- Receiver data and waste acceptance declaration
- DG class and UN number (for environmentally hazardous waste / NORM)
- Special handling instructions
- Any other information required by the waste contractor.

11.7.2 Record Keeping

Record keeping will be in accordance with Regulation 14(7) 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.

11.7.3 Auditing, Assurance, Management of Non-conformance and Continuous Improvement

The environmental performance of Woodside activities will be reviewed in a number of ways to:

- ensure all significant environmental aspects of the activity are covered in the EP
- ensure management measures to achieve environmental performance outcomes are being implemented, reviewed and amended where necessary
- ensure all environmental commitments have been met
- ensure impacts and risks will be continuously identified and reduced to ALARP
- identify potential non-conformances and opportunities for continuous improvement.

Woodside reviews and audits its contractors at various stages, including before contract award, before the activities and during activities, in accordance with Woodside PetDW HSE Management System performance. The environmental performance of contractors to Woodside involved in activities will be reviewed through activities including:

- inspections of Contractor Management systems and procedures
- pre-activity audits
- review of reporting documentation
- monitoring of progress
- auditing and assurance program
- regular review of incident, audit, inspection, observation, safety meeting and daily operations reports
- action item tracking and closeout

- end of campaign reviews.
- The environmental performance of Woodside activities will be reviewed through the following:
- The EP will be distributed to the project vessel contractor before performing the petroleum activity and compliance against EPOs, EPSs and MCs monitored regularly by Woodside.
- All environmental management commitments from the EP will be documented and a description of compliance with each commitment will be maintained.

Environment compliance monitoring allows continuous improvement initiatives to be developed and inform the development of future EPs.

11.8 EP Review Process

11.8.1 Management of Knowledge

Review of knowledge relevant to the existing environment is undertaken in order to identify changes relating to the understanding of the environment or legislation that supports the risk and impact assessments for EPs (in-force and in-preparation). Relevant knowledge is defined as:

- environmental science supporting the description of the existing environment
- socio-economic environment and consultation information
- environmental legislation.

The frequency and record of reviews, communication of relevant new knowledge and consideration of management of change are documented in the Woodside Environment Plan Guideline.

Under the Oil Spill Scientific Monitoring Program preparedness, an annual review and update to the environmental baseline studies database is completed and documented. Periodic location-focused environmental studies and baseline data gap analyses are completed and documented. Any subsequent studies scoped and executed as a result of such gap analysis are managed by the Environment Science Team and tracked via the Corporate Environment Baseline Database.

11.8.2 Program of Ongoing Engagement with Traditional Custodians

Woodside will undertake an annual review of the Program of Ongoing Engagement with Traditional Custodians (**Appendix J**) to determine 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.

11.8.3 Learning and Knowledge Sharing

Learning and knowledge sharing occurs via a number of different methods including:

- event investigations
- event bulletins
- after campaign review conducted, including review of environmental incidents as relevant
- ongoing communication with vessel operators
- formal and informal industry benchmarking
- cross asset learnings
- engineering and technical authorities discipline communications and sharing.

11.8.4 Review of Impacts, Risks and Controls across the life of the EP

In the unlikely case that activities described in this EP do not occur continuously or sequentially, before recommencing activities after a cessation period greater than 12 months, impacts, risks and controls will be reviewed.

The process will identify or review impacts and risks associated with the newly commencing activity and will identify or review controls to ensure impacts and risks remain/are reduced to ALARP and acceptable levels. Information learned from previous activities conducted under this EP will be considered. Controls which have previously been excluded on the basis of proportionality will be reconsidered. Any required changes will be managed by the MOC process outlined below (**Section 11.8.5**).

11.8.5 EP Management of Change

Management of changes are managed in accordance with Woodside's Environmental Approval Requirements Australia Commonwealth Guideline. Management of changes relevant to this EP, concerning the scope of the activity description (**Section 3**) including: review of advances in technology at stages where new equipment may be selected such as vessel contracting; changes in understanding of the environment, DCCEEW EPBC Act listed threatened and migratory species status, Part 13 statutory instruments (recovery plans, threat abatement plans, conservation advice, wildlife conservation plans) and current requirements for AMPs (**Section 4**); and potential new advice from external agencies (**Section 5**), will be managed in accordance with Regulation 17 of the Environment Regulations.

Risk will be assessed in accordance with the environmental risk management methodology (**Section 6**) to determine the significance of any potential new environmental impacts or risks not provided for in this EP. Risk assessment outcomes are reviewed in compliance with Regulation 17 of the Environment Regulations.

Minor changes where a review of the activity and the environmental risks and impacts of the activity do not trigger a requirement for a formal revision under Regulation 17 of the Environment Regulations, will be considered a 'minor revision'. Minor administrative changes to this EP, where an assessment of the environmental risks and impacts is not required (e.g., document references, phone numbers, etc.), will also be considered a 'minor revision'. Minor revisions as defined above will be made to this EP using Woodside's document control process. Minor revisions will be tracked in an MOC Register to ensure visibility of cumulative risk changes, as well as enable internal EP updates/reissuing as required. This document will be made available to NOPSEMA during regulator environment inspections.

11.8.6 OPEP Management of Change

Relevant documents from the OPEP (**Appendix D**) will be reviewed in the following circumstances:

- implementation of improved preparedness measures
- a change in the availability of equipment stockpiles
- a change in the availability of personnel that reduces or improves preparedness and the capacity to respond
- the introduction of a new or improved technology that may be considered in a response for this activity
- to incorporate, where relevant, lessons learned from exercises or events
- if national or state response frameworks and Woodside's integration with these framework changes.

Where changes are required to the OPEP, based on the outcomes of the reviews described above, they will be assessed against Regulation 17 to determine if EP, including OPEP, resubmission is required. Changes with potential to influence minor or technical changes to the OPEP are tracked in management of change records, project records and incorporated during internal updates of the OPEP or the five-yearly revision.

11.9 Ongoing Consultation

Although consultation for the purpose of Regulation 11A is complete, in accordance with Regulation 14 (9) of the Environment Regulations, the implementation strategy must provide for appropriate consultation with relevant authorities of the Commonwealth, a State or Territory and other relevant interested persons or organisations.

Woodside proposes to undertake the engagements with directly impacted relevant persons and additional persons. Relevant new information identified during ongoing consultation will be assessed, as appropriate using the EP Management of Knowledge (refer to **Section 11.8.1**) and Management of Change Process (refer to **Section 11.8.5**).

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 5**), Woodside will apply its EP Management of Knowledge process (refer to **Section 11.8.1**) and Management of Change process (refer to **Section 11.8.5**), as appropriate.

Woodside has developed a Program of Ongoing Engagement with Traditional Custodians (Appendix J), 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 J**. Where Traditional Custodian relevant persons have requested information or further engagement considered as ongoing consultation, but have not requested a framework agreement, these requests have been captured in **Table 11-4**. However, a framework agreement may still be initiated by these groups at any time.

11.10 Reporting

To meet the environmental performance outcomes and standards outlined in the EP, Woodside reports at a number of levels as described in the next subsections.

11.10.1 Routine Reporting (Internal)

11.10.1.1 Daily Progress Reports and Meetings

Daily reports for activities are prepared and issued to key support personnel and stakeholders, by relevant managers responsible for the field-based activities. The report provides performance information about operational activities, health, safety and environment, and current and planned work activities.

Meetings between key personnel are used to transfer information, discuss incidents, agree plans for future activities and develop plans and accountabilities for resolving issues.

11.10.1.2 Regular HSE Meetings

The project vessels will hold regular HSE meetings which cover all crews. During these meetings, environmental incidents will be reviewed, and awareness material presented. All personnel are required to attend the HSE meetings and attendance sheets are retained by the project vessel contractor. Daily meetings held onboard the project vessels also serve to reinforce environmental awareness during the petroleum activity.

Dedicated HSE Meetings will also be held with the offshore and Perth based management to address targeted HSE incidents and initiatives.

11.10.2 Routine Reporting (External)

11.10.2.1 External Reporting Requirements

Routine regulatory reporting requirements for the petroleum activity are summarised in **Table 11-4**. The requirements include that Woodside develop and submit an annual Environmental Performance Report to NOPSEMA, with the first report submitted within 12 months of the commencement of activities covered by this EP (as per the requirements of Regulation 14(2) (b) of the Environment Regulations).

Direction 5 of General Direction 833 required Woodside to submit to NOPSEMA an annual report on the progress of the decommissioning of Stybarrow field. This report must be submitted annually no later than 31 December and must be published on the Woodside website within 14 days of NOPSEMA notifying Woodside that the report is satisfactory.

Table 11-4: Routine external reporting requirements

Report / Notification	Recipient	Frequency	Communication	Comment
Start of Activity Notifications				
DoD Start of Activity Notification	DoD	Minimum of five weeks notification prior to the commencement of activities.	Written	As requested by DoD during consultation.
AHO Start of Activity Notification	AHO	No less than four weeks notification before the commencement of activities, where practicable.	Written	As requested by AMSA and AHO during consultation.
NOPSEMA Start of Activity Notification	NOPSEMA	At least ten days before the activity commences	Written	Complete NOPSEMA's Regulation 29 Start or End of Activity Notification form prior to petroleum activity
DMIRS Start of Activity Notification	DMIRS	Prior to activity commencement	Written	Notify DMIRS of the start date recovery executions, (petroleum.environment@dmirs.wa.gov.au). As requested by DMIRS during consultation
AFMA, DAFF-Fisheries, CFA, DPIRD, WAFIC and relevant Commercial Fishers Start of Activity Notification	AFMA, DAFF-Fisheries, CFA, DPIRD, WAFIC, Relevant Commercial Fisheries	Prior to activity commencement	Written	AFMA, DAFF – Fisheries, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Mackerel Managed Fishery (Area 2), Pilbara Trap Fishery and Pilbara Line Fishery)
Start of Activity Notifications requested during consultation	Recfishwest, BYAC	Prior to activity commencement and following completion of activities	Written	As requested during consultation.
AMSA JRCC Notification	AMSA	24 to 48 hours prior to activity commencement	Written	As requested by AMSA during consultation.

Report / Notification	Recipient	Frequency	Communication	Comment
End of Activity Notifications				
NOPSEMA End of Activity Notification	NOPSEMA	Within ten days of completion of the activity.	Written	Complete NOPSEMA's Regulation 29 Start or End of Activity Notification form prior to petroleum activity
DMIRS End of Activity Notification	DMIRS	Within ten days of completion of the activity.	Written	Notify DMIRS within 10 days of completing the petroleum activity (petroleum.environment@dmirs.wa.gov.au).
Email including confirmed spatial data for Stybarrow infrastructure	AIMS	Prior to activity commencement	Written	As requested by AIMS during consultation.
EP Performance Reporting				
NOPSEMA Environmental Performance Report	NOPSEMA	Annually, with the first report submitted within 12 months of the commencement of the petroleum activity covered by this EP	Written	In accordance with the Regulation 26C of the Environment Regulations, confirmation of compliance with the Performance Outcomes, Performance Standards and Measurement Criteria of this EP. Reporting period 1 July to 30 June. Report must include sufficient information to enable NOPSEMA to determine whether or not the environmental performance outcomes and performance standards in the EP have been met.
NOPSEMA End-of-activity EP Performance Report	NOPSEMA	Once the petroleum activities have ended and all obligations identified in this EP have been completed.	Written	The EP will end when Woodside notify NOPSEMA that petroleum activity has ended, and all of the obligations under the EP have been completed, and NOPSEMA has accepted the notification, in accordance with Regulation 25A of the Environment Regulations.
Incident Reporting				
Recordable Incident as required by Regulation 26B NOPSEMA must be notified of a breach of an EPO or EPS, in the EP	NOPSEMA	Monthly NOPSEMA Recordable Incident Reports to be issued by 15 th of each month.	Written	Written report - Details of recordable incidents that have occurred during the petroleum activity for previous month (if applicable).

Report / Notification	Recipient	Frequency	Communication	Comment
that applies to the activity that is not a reportable incident.				
<p>Reportable Incident, as required by) Regulation 16(c), 26 & 26A NOPSEMA must be notified of any reportable incidents. For the purposes of Regulation 16(c), a reportable incident is defined as:</p> <p>An incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage. For this EP, a Severity Level 3 is considered moderate environmental damage. Severity Levels 4 & 5 are considered significant environmental damage.</p>	NOPSEMA	As soon as practicable, and in any case not later than two hours after the first occurrence of a reportable incident, or if the incident was not detected at the time of the first occurrence, at the time of becoming aware of the reportable incident.	Oral	<p>The oral notification must contain:</p> <ul style="list-style-type: none"> ▪ all material facts and circumstances concerning the reportable incident known or by reasonable search or enquiry could be found out ▪ any action taken to avoid or mitigate any adverse environmental 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.
	NOPSEMA NOPTA	As soon as practicable after the oral notification.	Written	A written record of the oral notification must be submitted. The written record is not required to include anything that was not included in the oral notification.
	NOPSEMA NOPTA	<p>Must be submitted as soon as practicable, and in any case not later than three days after the first occurrence of the reportable incident unless NOPSEMA specifies otherwise.</p> <p>Same report to be submitted to within seven days after giving the written report to NOPSEMA.</p>	Written	<p>A written report must contain:</p> <ul style="list-style-type: none"> ▪ all material facts and circumstances concerning the reportable incident known or by reasonable search or enquiry could be found out ▪ any action taken to avoid or mitigate any adverse environmental 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 ▪ the action that has been taken, or is proposed to be taken, to prevent a similar incident occurring in the future. <p>Consider reporting using NOPSEMA's Report of an Accident, Dangerous Occurrence or Environmental Incident form.</p>

Report / Notification	Recipient	Frequency	Communication	Comment
AMSA notification of any oil pollution incidents in Commonwealth waters	AMSA	Within two hours.	Oral and Written	In accordance with the Navigation Act 2012, any oil pollution incidents in Commonwealth waters will be reported by the Vessel Master to AMSA within 2 hours via the national emergency notification contacts and a written report within 24 hours of the request by AMSA. The national 24-hour emergency notification contact details are: Free call: 1800 641 792 Fax: (02) 6230 6868 Email: mdo@amsa.gov.au
DoT Reporting	Oil Spill Response Coordination	Within two hours.	Oral	Notification of actual or impending spillage, release or escape of oil or an oily mixture that is capable of causing loss of life, injury to a person or damage to the health of a person, property or the environment
All actual or impending MOP incidents that are in, or may impact, State waters resulting from an offshore petroleum activity.	OSRC Unit within the DoT	POLREP following verbal notification. SITREP within 24 hours of request	Written	All oil pollution incidents in WA State waters will be reported by the Vessel Master to the Oil Spill Response Coordination (OSRC) Unit within the DoT as soon as practicable (within 2 hours of spill occurring) via the 24-hour reporting number (08) 9480 9924. The Duty Officer will then advise whether the following forms are required to be submitted: Marine Pollution Form (POLREP) http://www.transport.wa.gov.au/mediaFiles/marine/MAC-F-PollutionReport.pdf and/ or Marine Pollution Situation Report (SITREP) http://www.transport.wa.gov.au/mediaFiles/marine/MAC-F-SituationReport.pdf
DNP Reporting Notification of the event of oil pollution within a marine park or where an oil spill response action	DNP	So far as reasonably practicable prior to response action being written.	Oral and written	The DNP will be made aware of oil/gas pollution incidences which occur within a marine park or are likely to impact on a marine park as soon as possible. Notification will be provided to the 24-hour Marine Compliance Duty Officer on 0419 293 465. The notification will include: <ul style="list-style-type: none"> ▪ titleholder details

Report / Notification	Recipient	Frequency	Communication	Comment
must be taken within a marine park; or if any changes to intended operations (requested through consultation)				<ul style="list-style-type: none"> ▪ time and location of the incident (including name of marine park likely to be affected) ▪ proposed response arrangements as per the OPEP (such as dispersant, containment) ▪ confirmation of providing access to relevant monitoring and evaluation reports when available ▪ contact details for the response coordinator. <p>Note that the DNP may request daily or weekly Situation Reports, depending on the scale and severity of the pollution incident.</p>
DPIRD Reporting If marine pests or disease are suspected this must be reported to DPIRD.	DPIRD	Within 24 hours.	Oral	Notification of any suspected marine pests or diseases including any organism listed in the Western Australian Prevention List for Introduced Marine Pests and any other non-endemic organism that demonstrates invasive characteristics.
DCCEEW Reporting Any harm or mortality to EPBC Act-listed threatened marine fauna	DCCEEW	Within seven days to EPBC.permits@environment.gov.au	Written	Notification of any harm or mortality to an EPBC listed species of marine fauna whether attributable to the activity or not.
Reporting any ship strike incident with cetaceans will also be reported to the National Ship Strike database.	Australian Marine Mammal Centre	As soon as practicable.	Written	Ship strike report provided to the Australian Marine Mammal Centre: https://data.marinemammals.gov.au/report/shipstrike
Ongoing Consultation (Section 11.9)				
Program of Ongoing	Relevant cultural authorities	Ongoing. Responses to any feedback received by Traditional Custodian	Oral and written	Any relevant new information on cultural values will be assessed using the EP Management of Knowledge (Section 11.8.1) and Management of change Process (Section 11.8.2).

Report / Notification	Recipient	Frequency	Communication	Comment
Engagement with Traditional Custodians (Appendix J)		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.		
Ongoing Engagement	Malgana, MAC, Nanda	Woodside will continue to engage as part of ongoing engagement. Responses will be provided within four weeks of receipt of additional feedback.	Oral and written	As requested during consultation. Engagement is not specific to this activity.

11.10.2.2 General Direction 833 Reporting

To meet Direction 6 in Schedule 1 of General Direction 833, Woodside will undertake the following reporting define in **Table 11-5**.

To meet Direction 3 and 4, Woodside will undertake final environmental surveys (**Section 3.8.2**) and ROV ‘as left’ clearance surveys (**Section 3.7.8**). Data from these surveys and other operational data collected over the life of the Stybarrow development, will be analysed to inform what, if anything, needs to be done to provide for the conservation and protection of natural resources in the licence area, and make good any damage to the seabed or subsoil in the licence area caused by any person engaged or concerned with the operations.

Woodside will provide a report to NOPSEMA within 12 months following completion of final decommissioning activities with their demonstration for how Woodside has provided for the conservation and protection of the natural resources and made good any damage to the seabed or subsoil in the licence areas relevant to the Stybarrow field development (see reporting requirements in **Table 11-5**).

Table 11-5: General Direction 833 Reporting Requirements

Report / Notification	Recipient	Frequency	Communication	Comment
NOPSEMA Decommissioning Annual Progress Report in accordance with NOPSEMA General Direction (833)	NOPSEMA	Annually, no later than 31 December each year	Written	Submit to NOPSEMA on an annual basis, until all directions have been met, a progress report detailing planning towards and progress with undertaking the actions required by Direction 1, 2, 3 and 4. The report submitted under Direction 5(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 holders’ website within 14 days of obtaining NOPSEMA satisfaction under Direction 5(b)
Compliance with Direction 4 & 5 of General Direction (833)	NOPSEMA	Once, within 12 months following completion of final decommissioning activities	Written	Report will include results from environmental monitoring program (Section 7.6.6). Demonstrates how Woodside has provided for the conservation and protection of the natural resources in the licence area relevant to the Stybarrow Development Project. Demonstrates how Woodside has made good any damage to the seabed or subsoil in the licence area caused by any person engaged or concerned in the operations in relation to the Stybarrow Development Project.

11.10.2.3 End of the Environment Plan

The EP will end when Woodside notify NOPSEMA that petroleum activity has ended, and all of the obligations under the EP have been completed, and NOPSEMA has accepted the notification, in accordance with Regulation 25A of the Environment Regulations.

Notification will be through completion and submission of NOPSEMA’s Regulation 25A – End of Operation of Environment Plan Form.

11.10.3 Incident Reporting (Internal)

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 6**). Detailed investigations are completed for all incidents classified as a 3, 4 or 5 severity (consequence) level and high potential environmental incidents.

11.10.4 Incident Reporting (External) – Reportable and Recordable

11.10.4.1 Reportable Incidents

A reportable environmental incident is defined in Regulation 4 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”.*

A reportable incident for the petroleum activities is:

- An uncontrolled release of hydrocarbons or environmentally hazardous chemicals of more than 80 L to the marine environment
- An incident that has caused environmental damage with a severity (consequence) level of ≥ 3 , as defined in the Woodside (PetDW) HSE Risk Matrix (refer to **Table 6-2**), or
- An incident that has the potential to cause environmental damage with a severity (consequence) level of ≥ 3 , as defined in the Woodside (PetDW) HSE Risk Matrix (refer to **Table 6-2**)

In accordance with Regulations 26, 26A and 26AA, 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 will 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 DMIRS.

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.

11.10.4.2 Recordable Incident

A recordable environmental incident is defined in Regulation 4 of the Environment Regulations as:

“...recordable incident, for an activity, means a breach of an environmental performance outcome (EPO) or environmental performance standard (EPS), in the environment plan that applies to the activity, that is not a reportable 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

11.11 Emergency Preparedness and Response

11.11.1 Overview

Under Regulation 14(8) of the Environment Regulations, the implementation strategy must contain an oil pollution emergency plan (OPEP) and provide for the updating of the OPEP. In accordance with Regulation 14, the sections below detail the implementation strategy for hydrocarbon spill emergency conditions during decommissioning activities. The section outlines the response framework in the event of a hydrocarbon spill and the emergency response arrangements for a Level 1 and Level 2 oil spill event based on the strategic NEBA assessment. Specific Woodside practices and procedures are presented to ensure that the environmental impacts and risks of spill response activities will be continuously identified and reduced to ALARP, along with environmental performance outcomes, performance standards and management criteria for spill response activities.

As part of the implementation strategy, Woodside has developed an activity specific OPEP (**Appendix D**). The implementation strategy includes Woodside processes and procedures for how training, competencies and on-going environmental awareness will be maintained for the duration of the activity, for all personnel and contractors involved in spill response activities (resourced by Woodside).

11.11.2 Oil Spill Response Arrangements

11.11.2.1 Incident Jurisdictions

In the event of an oil spill, Control Agencies are assigned to respond to the various levels of spills is outlined in **Table 11-6**. The 'Statutory Agency' and 'Control Agency' are defined as follows:

- **Jurisdictional Authority:** The relevant State or Commonwealth Agency assigned by legislation, administrative arrangements or within the relevant contingency plan, to control response activities to a maritime environmental emergency in their area of jurisdiction.
- **Control Agency:** is the agency with operational responsibility in accordance with the relevant contingency plan to take action to respond to an oil and/or chemical spill in the marine environment.

Table 11-6: Statutory and lead control agencies for oil spill pollution incidents

Area	Spill Source	Jurisdictional Authority	Lead Control Agency	
			Level 1	Level 2
Commonwealth waters	Offshore petroleum activity	NOPSEMA	Woodside	Woodside
	Vessels	AMSA	AMSA	AMSA
State waters	Offshore petroleum activity	DoT	Woodside	DoT
	Vessels	DoT	DoT	DoT
Port waters	Vessels	Port authority	Port authority / DoT	Port authority / DoT

11.11.2.2 Commonwealth Waters

Woodside holds the Control Agency role for its facility-related spills within Commonwealth waters. As defined by Schedule 3, Part 1, Clause 4 of the OPGGS Act, ‘facility’ spills include those from fixed platforms, Floating Production Storage and Offloading (FPSO)/Floating Storage and Offloading (FSO) systems, Mobile Offshore Drilling Units (MODU) and subsea infrastructure. It also includes vessels undertaking decommissioning activities in Woodside’s operational area.

For instances where Woodside, as the Control Agency, requests assistance of AMSA, Woodside will request an AMSA liaison officer be mobilised to the IMT as soon as possible. In the interim period until AMSA have assembled their IMT, Woodside (Incident Commander) will liaise closely with the AMSA liaison officer and or the AMSA Incident Controller to inform them of first strike/initial actions being taken.

11.11.2.3 Western Australia

For WA State waters, the Department of Transport (DoT) Marine Safety General Manager (or delegate) is prescribed as the Hazard Management Agency (HMA) for marine oil pollution as per the Western Australian *Emergency Management Act 2005* and *Emergency Management Regulations 2006*. The DoT as the HMA has developed the State Hazard Plan: Maritime Environmental Emergencies (DoT, 2021).

If a Level 2 spill has potential to enter WA waters, Woodside would contact the DoT Maritime Environmental Emergency Response (MEER) unit, as per the reporting requirements in Appendix A - First Strike Plan of the OPEP (**Appendix D**). Upon notification, the DoT would assume the role of Control Agency and would activate its Maritime Environmental Emergency Coordination Centre (MEECC), DoT Incident Management Team (IMT) and appoint the State Marine Pollution Controller (SMPC).

Woodside will be required to work in coordination with DoT during such instances, as outlined within the DoT’s Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (DoT, 2020) (available online <https://www.transport.wa.gov.au/imarine/oil-spill-contingency-plans.asp>).

For Level 2 spills that cross from Commonwealth waters to WA waters, both DoT and Woodside will be Control Agencies and would work in partnership to coordinate the response effort. For a cross-jurisdictional response, there will be a Lead IMT (DoT or Woodside) for each spill response activity, with DoT’s control resting primarily on WA State waters activities.

Appendix 2 of the Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (DoT, 2020) provides guidance on the allocation of a Lead IMT to response activities for a cross jurisdictional spill.

To facilitate effective coordination between the two Controlling Agencies and their respective IMT’s during a cross-jurisdictional response, a Joint Strategic Coordination Committee (JSCC) will be established (**Figure 11-2**). The JSCC will be jointly chaired by the State Marine Pollution Controller (SMPC) and Woodside’s nominated senior

representative and will comprise of individuals deemed necessary by the chairs to ensure an effective coordinated response across both jurisdictions. Additional details on the JSCC’s key functions are outlined in the Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (DoT, 2020).

At the request of the SMPC, Woodside will be required to provide all necessary resources, including personnel and equipment, to assist the DoT’s IMT in performing duties as the Control Agency for State waters response. This includes providing an initial 11 personnel to work within the DoT Incident Control Centre in Fremantle, no later than 8 am following the day of the request. It also includes providing personnel to serve in DoT’s Forward Operating Base (FOB) no later than 24 hours following formal request by the SMPC. DoT will in turn, provide Woodside with Liaison Officer/s from DoT’s command structure to sit within Woodside’s IMT. **Figure 11-3** shows the organisational structure of DoT personnel embedded in the Woodside IMT and the structure of Woodside personnel in the DoT (State) IMT. Provision of personnel to support the WA DoT IMT and FOB may be through a combination of Woodside, AMOSC and/or AMOSC Core Group personnel. As a minimum, the Deputy Planning Officer and Deputy Logistics Officer supporting the WA DoT IMT will be filled by Woodside IMT personnel with familiarity with relevant Woodside systems and processes. Woodside will locate its IMT in the existing IMT Control Room in Perth.

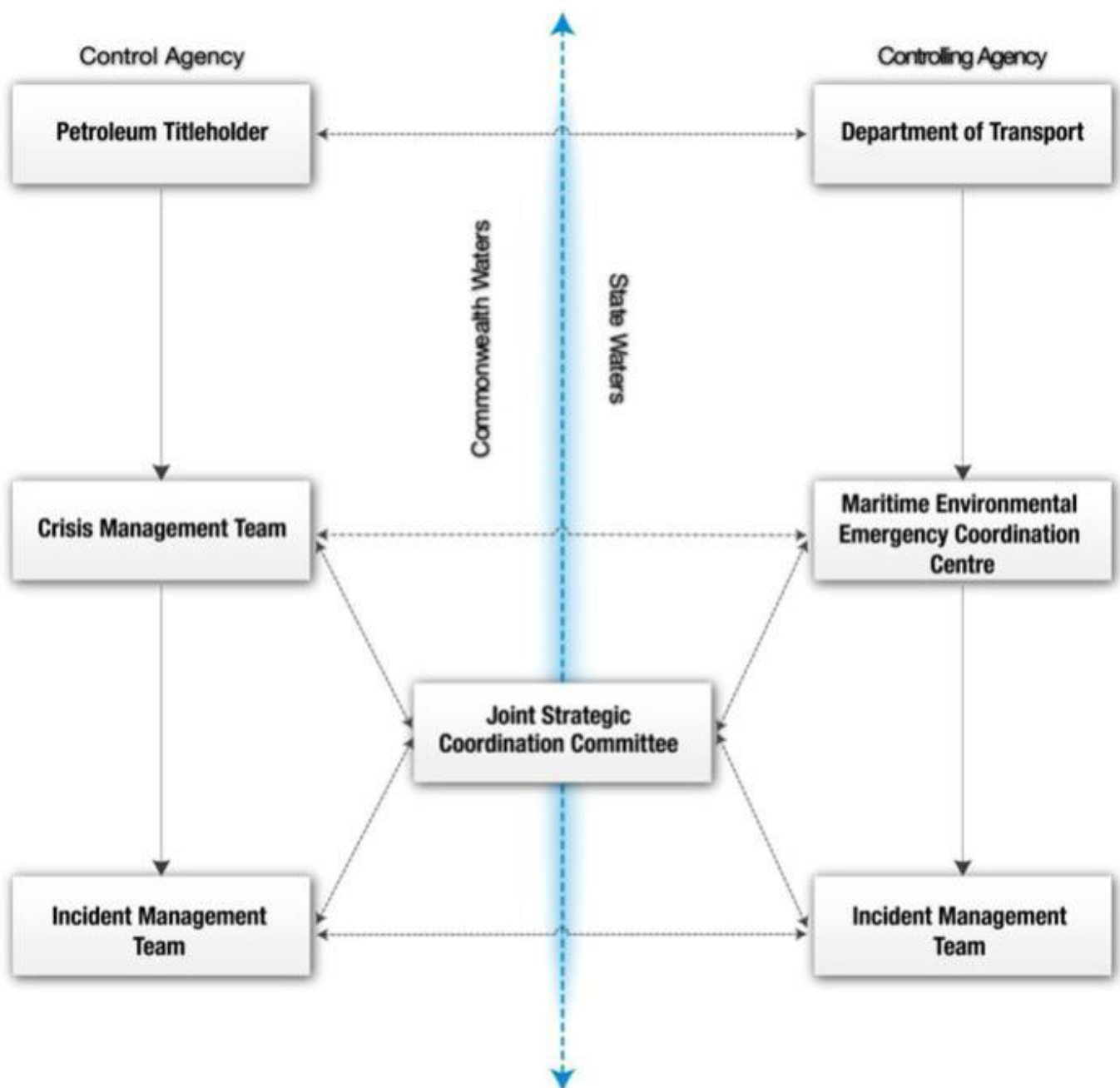


Figure 11-2: Controlling Agency coordination arrangements – Cross jurisdictional (DoT, 2020)

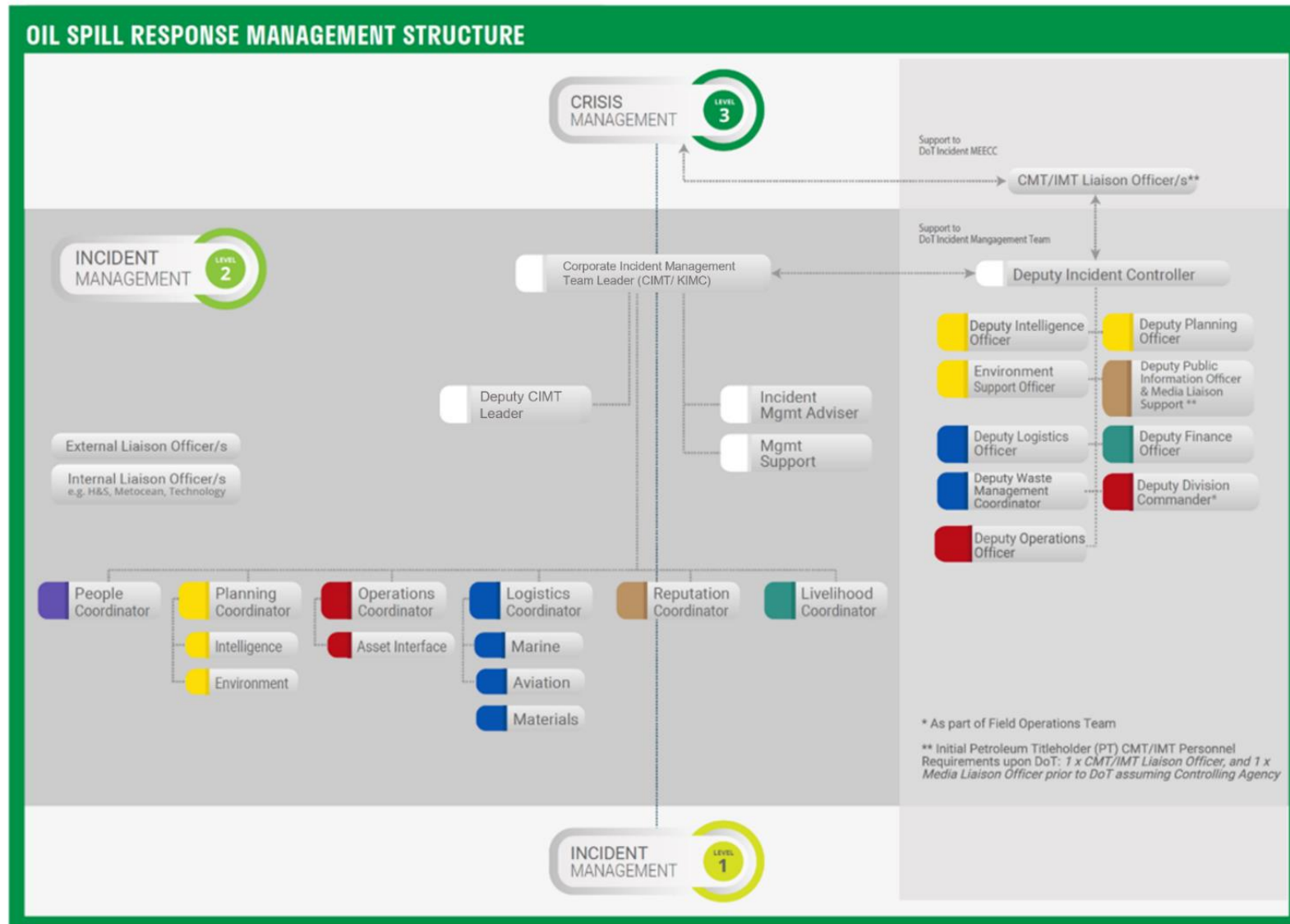


Figure 11-3: Crisis and emergency management structure and support to WA State waters Control Agency – as per WA DoT IGN requirements

11.11.3 External Plans

The OPEP (**Appendix D**) has been developed to meet all relevant requirements of the Environment Regulations. The following external plans listed in **Table 11-7** have been used or referred to in the development of the OPEP and the implementation strategy for hydrocarbon spill emergency conditions that may occur during decommissioning activities. The OPEP interfaces with National, State and Woodside oil spill arrangements and plans.

Table 11-7 Relevant external Oil Spill Arrangements and Plans for Commonwealth and State Waters

Relevant External Plans and Guidance Documents	Description
National Plan for Maritime Environmental Emergencies (NatPlan)	Sets out the national arrangements, policies and principles for the management of marine oil pollution. It defines obligations the States and various industry sectors in respect of marine oil pollution prevention, preparation, response and recovery.
Australian Industry Cooperative Spill Response Arrangements (AMOSPlan)	Managed by AMOSC, it details the cooperative arrangements for response to oil spills by Australian oil and associated industries.
Western Australia State Hazard Plan for Maritime Environmental Emergencies (SHP-MEE) (DoT, 2021) (HazPlan)	Formally endorsed by the State Emergency Management Committee on 4 October 2019, the MEE details the management arrangements for preparation and response to marine oil pollution incidents in State waters.
DoT Oil Spill Contingency Plan	Details the procedures and arrangements for the management of marine oil pollution emergencies that are the responsibility of the DoT. DoT Offshore Petroleum Industry Guidance Note (IGN) – Marine Oil Pollution (MOP) Response and Consultation Arrangements (available online: https://www.transport.wa.gov.au/imirine/oil-spill-contingency-plans.asp).
Industry Joint Venture Plans	Various plans developing general and assisted Oil Spill Response Capabilities
Western Australian Oiled Wildlife Response Plan (WAOWRP)	Provides guidance and sets out the management arrangements for implementing oiled wildlife response in State waters. Each region has an Oiled Wildlife Response Plan that gives further details on sensitivities and available resources. The Pilbara Region Oiled Wildlife Response Plan is the relevant regional plan for oiled wildlife associated with Stybarrow decommissioning activities.
AMSA Australian Government Coordination Arrangements for Maritime Environmental Emergencies	Provides a framework for the coordination of Australian Governmental departments and agencies in response to a maritime environmental emergency

11.11.3.1 Woodside and Contractor Plans

Internal Woodside requirements include the need to develop Emergency Response plans that are scaled according to the petroleum activity, associated hazards, material risks and applicable regulatory requirements.

To support this requirement, the following documents have been developed and implemented:

- Incident & Crisis Management Procedure
- Environmental Sensitivities Exmouth Region
- North West Cape Sensitivity Mapping
- The Stybarrow Decommissioning and Field Management OPEP (**Appendix D**)

- SOPEPs and bridging documents
- Tactical Response Plans (TRPs) for identified receptors.

11.11.4 Woodside Incident Response

11.11.4.1 Categorisation of Incidents and Emergencies

Woodside categorises incidents and emergencies in relation to response requirements as defined in **Table 11-8**.

Table 11-8: Woodside Classifications for Incidents and Emergencies

Incident Category	Description
Level 1	Level 1 incidents are those that can be resolved using existing resources, equipment and personnel. A Level 1 incident is contained, controlled and resolved by site/regionally based teams using existing resources and functional support services.
Level 2	Level 2 incidents are characterised by a response that requires external operational support to manage the incident. It is triggered if the capabilities of the tactical level response are exceeded. This support is provided to the activity by activating all or part of the responsible Corporate Incident Management Team (CIMT).
Level 3	A Level 3 incident or crisis is identified as a critical event that seriously threatens the organisation’s people, the environment, company assets, reputation, or livelihood. At Woodside, the Crisis Management Team (CMT) manages the strategic impacts in order to respond to and recover from the threat to the company (material impacts, litigation, legal and commercial, reputation etc.). The CIMT may also be activated as required to manage the operational incident response.

11.11.4.2 Woodside Response Organisation Structure

The Woodside Crisis and Emergency Management (CEM) philosophy is based on three levels of response teams (refer to **Table 11-9**) which allow for a flexible response with the appropriate level of leadership and support, according to the nature of the specific incident.

Table 11-9: Woodside Response Structure – teams are progressively activated depending on the severity of an incident

Team	Role
Emergency Response Team	The ERT is responsible for physically controlling incidents in the field, where possible, and communicating known facts to the relevant IMT. The RT will depend on the facility or vessel involved in the incident.
Corporate Incident Management Team (CIMT)	The CIMT’s role is to provide technical and logistical support to the ERT. It is based in Perth, Australia.
Crisis Management Team (CMT)	The role of the CMT is to provide strategic leadership and support. It is based in Australia or USA.

The following sections describe the teams listed in **Table 11-9** based on the worst-case spill scenarios for the Stybarrow Decommissioning petroleum activity.

11.11.4.2.1 Emergency Response Team

The ERT will depend on the vessel involved in the incident. The Vessel Master will be in command and will relay immediate emergency response information in the field to Woodside IMT.

The role of the ERT is to provide local and on-scene response by implementing priority objectives and attempts to control or contain the source and make appropriate emergency notifications. The ERT reports to the IMT.

Roles and responsibilities of the Woodside mobilised ERT are illustrated in **Table 11-10**.

Table 11-10: ERT roles and responsibilities

Team	Role
Emergency Commander / On-Scene Commander	The Emergency Commander / On-Scene Commander has overall responsibility for management of an incident and is responsible for determining the status of the emergency. This will be the Vessel Master.
Emergency Communications Coordinator	The role of the Emergency Communications Coordinator is to provide a link between all operating responders and to assist them in controlling the incident.
Emergency Coordinator	The Emergency Coordinator provides technical support during the emergency response and communicates with the Emergency Commander / On-Scene Commander.

11.11.4.2.2 Corporate Incident Management Team (CIMT)

The Corporate Incident Management Team (CIMT), based in Woodside’s head office in Perth, is the onshore coordination point for a Level 2 offshore emergency. The CIMT is staffed by an appropriately skilled team available on call 24-hours a day. The purpose of the team is to coordinate rescues, minimise damage to the environment and facilities, and to liaise with external agencies.

Woodside will have an Emergency Response Plan (ERP) in place relevant to the Petroleum Activities Program. The ERP provides procedural guidance specific to the asset and location of operations to control, coordinate and respond to an emergency or incident. The ERP will contain instructions for vessel emergency, medical emergency, search and rescue, reportable incidents, incident notification, contact information and activation of the contractor’s emergency centre and Woodside Communication Centre (WCC).

The CIMT is responsible for the spill response for Level 2 spills. Those responsible for an oil spill response are shown in **Figure 11-4** with allocated responsibilities detailed in **Table 11-11**.

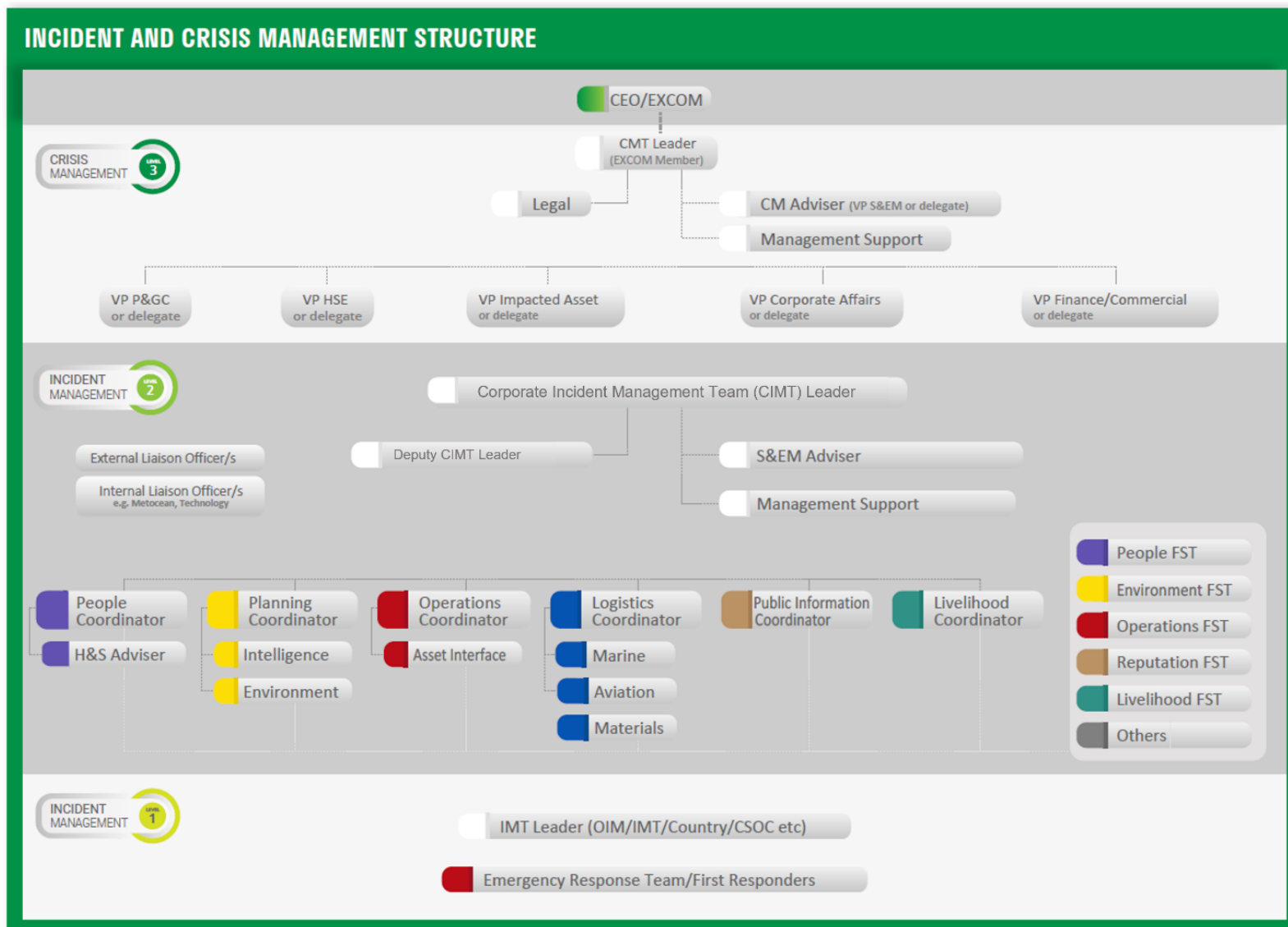


Figure 11-4: Woodside Incident and Crisis Management Structure

Table 11-11: CIMT roles and responsibilities

Role	Responsibilities
CIMT Incident Commander	CIMT leadership is provided by a CIMT Incident Commander and Deputy Incident Commander. Accountable and responsible for the performance of the CIMT upon activation, including controlling tempo and workflow to ensure CIMT process collect and process information to support good decision making.
Human Resources Officer	Responsible for end-to-end welfare of personnel involved in the incident, whilst managing communication and information flow to and from staff, families, and related stakeholders.
Planning Section Chief	Develops current and future plans. Provides longer term options for the normalisation and recovery of incident.
Operations Section Chief	Manages operational activities that are undertaken directly to resolve the incident, including the management of all resources (people and equipment) assigned under the Operations Section.
Logistics Section Chief	Ensures the resources, facilities, services, and materials required to support the incident.
Public Information Officer	Develops strategies to manage or mitigate reputational impacts of the incident. Additional responsibilities include the deployment of communication strategies and coordinating stakeholder engagements both internally and externally.
Finance Section Chief	Assesses and manages the broader business impacts resulting from incidents (both short and long term). The Finance Section considers aspects such as commercial, marketing, insurance, legal, and financial implications.

The CIMT consists of key personnel filling a number of defined roles with a broad range of disciplines (e.g., drilling, operations, engineering, maintenance, HSE, supply, external affairs, human resources, finance), together with other support service personnel as necessary. This enables Woodside to respond to a variety of incidents. To supplement training, each CIMT member participates in desktop exercises and additional minor and major exercises. The training “desktop” exercises are also arranged during the weekly handover sessions, to test a range of CIMT responses including oil spill response.

The CIMT has key corporate and external communications responsibilities for:

- providing tactical and strategic direction, technical expertise and support during an incident
- informing and liaising with relevant emergency services and regulatory authorities as appropriate
- managing external communications with media, relatives, contractors, customers, etc.
- managing Human Resources and Personnel Response (formerly Relative Response) activities
- documenting all aspects of the emergency response activities and communications.

If a response to an oil spill incident requires additional support, the CIMT Leader may activate external specialist contractors including the Australian Marine Oil Spill Centre (AMOSC) (including its core group members), Oil Spill Response Limited (OSRL) and Wild Well Control Inc. (WWCI), to augment the CIMT’s capacity, and request that a Deputy/technical advisor be assigned.

In addition to the Woodside CEM Advisor, AMOSC or OSRL personnel may also be assigned to the CIMT to provide additional guidance on the Incident Command Structure (ICS) process and oil spill response strategies. Guidance and support will be available via phone/video conference.

Regulation 14(5) requires that the implementation strategy includes measures to ensure employees and contractors have the appropriate competencies and training (**Table 11-12**). Woodside has conducted a risk-based training needs analysis on positions required for effective oil spill response. Following the mapping of training to Woodside identified competencies, training was then mapped to positions based on their required competencies.

Table 11-12: Minimum levels of competency for key Incident Management Team positions

Position	Minimum Competency
Corporate Incident Management Team (CIMT) Leader	<ul style="list-style-type: none"> • Incident and Crisis Leadership Development Program (ICLDP) or CIMT Fundamentals Course (internal course). • IMO2 or equivalent spill response specialist level with an oil spill response organisation (OSRO) • Participation in L2 oil spill skills maintenance exercise (annually) • ICS 100/200
Operations, Planning, Logistics and Finance Sections, and other rostered members of the CIMT	<ul style="list-style-type: none"> • OSR Theory (e.g., Oil Spill Response Skills Enhancement Course or IMO 1/2/3) • CIMT Fundamentals Course (internal course). • Participation in L2 oil spill skills maintenance exercise (annually) • ICS 100/200
Environment Unit Leader	<ul style="list-style-type: none"> • CIMT Fundamentals. • IMO2 or equivalent spill response Specialist level with an OSRO • Participation in L2 oil spill skills maintenance exercise (annually) • ICS 100/200

Note on competency/equivalency

In 2018, Woodside reviewed incident and crisis systems, processes and tools to assess whether these were fit-for-purpose and has rolled out a change to the Incident and Crisis Management training and the Oil Spill Response training requirements for both CIMT and field-based roles.

The revised CIMT Fundamentals Training Program and ICLDP align with the performance requirements of the *PMAOMIR320 – Manage Incident Response Information* and *PMAOM0R418 – Coordinate Incident Response*.

Regarding training-specific equivalency:

- ICLDP is mapped to PMAOM0R418 (which is equivalent to IMO3 when combined with Woodside’s OSREC course) and ensures broader incident management principles aligned with Australasian Inter-service Incident Management System.
- The revised CIMT Fundamentals Course is mapped to PMAOMIR320 (which is equivalent to IMO2). The blended learning program offers modules aligned to IMO3, IMO2, IMO1 and Australian Marine Oil Spill Centre Core Group Training Oil Spill Response Organisation Specialist level training.
- OSREC involves the completion of two online AMSA Modules (Introduction to National Plan and incident management, and Introduction to oil spills) as well as elements of IMO1 and IMO2 tailored to Woodsidespecific oil spill response capabilities.
- Woodside Learning Services is responsible for collating and maintaining personnel training records. The Hydrocarbon Spill Preparedness (HSP) Dashboard reflects the competencies required for each oil spill role (Incident Management Team/operational).

11.11.4.2.3 Potential Resource Needs

Potential resource requirements for all Levels of response (per 12-hour operational period) are detailed in the [Hydrocarbon Spill Preparedness \(HSP\) Competency Dashboard](#). Woodside’s response arrangements can be scaled up or down dependent on the nature and ‘level’ of the incident.

11.11.4.3 Additional Personnel

Additional personnel, not on the CIMT would be resourced due to their specific discipline to provide support to the IMT.

- As all events would be managed by the online Kallip system, additional resources could be sourced remotely i.e., Woodside Operations in Trinidad and Tobago, Gulf of Mexico and Houston.
- AMOSC Core group are able to provide technical support as well as personnel. Around 95 personnel are available under the joint agreement.

11.11.4.4 Western Australian DoT

As described in **Section 11.11.4.2**, Woodside are required to provide support personnel to the DoT IMT in the event that DoT is required to establish an IMT. The roles and key duties of these positions are outlined in **Table 11-13**.

Table 11-13: Woodside roles in the DoT Incident Management Team

Woodside Roles within DoT IMT (State MEECC)	Key Duties
CMT Liaison Officer	<ul style="list-style-type: none"> ▪ Provide a direct liaison between the Woodside CMT and the State MEECC. ▪ Facilitate effective communications and coordination between the CIMT Leader and the SMPC. ▪ Offer advice to SMPC on matters pertaining to Woodside crisis management policies and procedures
Deputy Incident Controller	<ul style="list-style-type: none"> ▪ Provide a direct liaison between the DoT IMT and the Woodside IMT. ▪ Facilitate effective communications and coordination between the Woodside Incident Commander and the DoT Incident Controller. ▪ Offer advice to the DoT Incident Controller on matters pertaining to the Woodside incident response policies and procedures. ▪ Offer advice to the Safety Coordinator on matters pertaining to Woodside safety policies and procedures particularly as they relate to Woodside employees or contractors operating under the control of the DoT IMT.
Deputy Intelligence Officer	<ul style="list-style-type: none"> ▪ As part of the DoT Intelligence Team, assist the Intelligence Officer in the performance of their duties in relation to situation and awareness. ▪ Facilitate the provision of relevant modelling and predications from the Woodside IMT. ▪ Assist in the interpretation of modelling and predictions originating from the Woodside IMT. ▪ Facilitate the provision of relevant situation and awareness information originating from the DoT IMT to the Woodside IMT. ▪ Facilitate the provision of relevant mapping from the Woodside IMT. ▪ Assist in the interpretation of mapping originating from the Woodside IMT. ▪ Facilitate the provision of relevant mapping originating from the Woodside IMT.
Deputy Planning Officer	<ul style="list-style-type: none"> ▪ As part of the DoT Planning Team, assist the Planning Officer in the performance of their duties in relation to the interpretation of existing response plans and the development of incident action plans and related sub-plans. ▪ Facilitate the provision of relevant IAP and sub-plans from the Woodside IMT. ▪ Assist in the interpretation of the Woodside OPEP. ▪ Assist in the interpretation of the Woodside IAP and sub-plans from the Woodside IMT.

Woodside Roles within DoT IMT (State MEECC)	Key Duties
	<ul style="list-style-type: none"> ▪ Facilitate the provision of relevant IAP and sub-plans originating from the DoT IMT to the Woodside IMT. ▪ Assist in the interpretation of Woodside's existing resource plans. ▪ Facilitate the provision of relevant components of the resource sub-plan originating from the DoT IMT to the Woodside IMT. ▪ (Note this individual must have intimate knowledge of the relevant Woodside OPEP and planning processes).
Environment Support Officer	<ul style="list-style-type: none"> ▪ As part of the Intelligence Team, assist the Environment Coordinator in the performance of their duties in relation to the provision of environmental support into the planning process ▪ Assist in the interpretation of the Woodside OPEP and relevant Tactical Response Plan (TRPs). ▪ Facilitate in requesting, obtaining and interpreting environmental monitoring data originating from the Woodside IMT. ▪ Facilitate the provision of relevant environmental information and advice originating from the DoT IMT to the Woodside IMT.
Deputy Public Information Officer ³⁶	<ul style="list-style-type: none"> ▪ As part of the Public Information Team, provide a direct liaison between the Woodside Media team and DoT IMT Media team. ▪ Facilitate effective communications and coordination between Woodside and DoT media teams. ▪ Assist in the release of joint media statements and conduct of joint media briefings. ▪ Assist in the release of joint information and warnings through the DoT Information & Warnings team. ▪ Offer advice to the DoT Media Coordinator on matters pertaining to Woodside media policies and procedures. ▪ Facilitate effective communications and coordination between Woodside and DoT Community Liaison teams. ▪ Assist in the conduct of joint community briefings and events. ▪ Offer advice to the DoT Community Liaison Coordinator on matters pertaining to Woodside community liaison policies and procedures. ▪ Facilitate the effective transfer of relevant information obtained from the Contact Centre to the Woodside IMT.
Deputy Logistics Officer	<ul style="list-style-type: none"> ▪ As part of the Logistics Team, assist the Logistics Officer in the performance of their duties in relation to the provision of supplies to sustain the response effort. ▪ Facilitate the acquisition of appropriate supplies through Woodside existing OSRL, AMOSC and private contract arrangements. ▪ Collects Request Forms from DoT to action via the Woodside IMT. ▪ (Note this individual must have intimate knowledge of the relevant Woodside logistics processes and contracts).
Deputy Waste Management Coordinator	<ul style="list-style-type: none"> ▪ As part of the Operations Team, assist the Waste Management Coordinator in the performance of their duties in relation to the provision of the management and disposal of waste collected in State waters.

³⁶ In the event of an incident, access to media and communications response strategy and a comprehensive stakeholder list inclusive of all potentially relevant stakeholders, including indigenous organisations are contained via Santos' internal intranet site for use by CMT/IMT members

Woodside Roles within DoT IMT (State MEECC)	Key Duties
	<ul style="list-style-type: none"> ▪ Facilitate the acquisition of appropriate services and supplies through Woodside existing private contract arrangements related to waste management. ▪ Collects Waste Collection Request Forms from DoT to action via the Woodside IMT.
Deputy Finance Officer	<ul style="list-style-type: none"> ▪ As part of the Finance Team, assist the Finance Officer in the performance of their duties in relation to the setting up and payment of accounts for those services acquired through Woodside 's existing OSRL, AMOSC and private contract arrangements. ▪ Facilitate the communication of financial monitoring information to Woodside to allow them to track the overall cost of the response. ▪ Assist the Finance Officer in the tracking of financial commitments through the response, including the supply contracts commissioned directly by DoT and to be charged back to Woodside.
Deputy Operations Officer	<ul style="list-style-type: none"> ▪ As part of the Operations Team, assist the Operations Officer in the performance of their duties in relation to the implementation and management of operational activities undertaken to resolve an incident. ▪ Facilitate effective communications and coordination between the Woodside Operations Section and the DoT Operations Section. ▪ Offer advice to the DoT Operations Officer on matters pertaining to Woodside incident response procedures and requirements. ▪ Identify efficiencies and assist to resolve potential conflicts around resource allocation and simultaneous operations of Woodside and DoT response efforts.
Deputy Division Commander (FOB)	<ul style="list-style-type: none"> ▪ As part of the Field Operations Team, assist the Division Commander in the performance of their duties in relation to the oversight and coordination of field operational activities undertaken in line with the IMT Operations Section's direction. ▪ Provide a direct liaison between Woodside Forward Operations Base/s (FOB/s) and the DoT FOB. ▪ Facilitate effective communications and coordination between Woodside FOB Operations Commander and the DoT FOB Operations Commander. ▪ Offer advice to the DoT FOB Operations Commander on matters pertaining to Woodside incident response policies and procedures. ▪ Assist the Safety Coordinator deployed in the FOB in the performance of their duties, particularly as they relate to Woodside employees or contractors. ▪ Offer advice to the Senior Safety Officer deployed in the FOB on matters pertaining to Woodside safety policies and procedures.

11.11.5 Oil Spill Response Organisations

In line with Woodside Crisis and Emergency Management arrangements, Woodside has established formalised third-party contracts and agreements with defined performance standards/criteria for the provision of resources, services or equipment in support of emergency response activities. These resources will be activated, dispatched and deactivated prior to and during an emergency.

Woodside maintains contracts with a number of Oil Spill Response Organisations (OSROs). The main relationships are detailed in the sub-sections.

11.11.5.1 AMOSC

AMOSC is an industry funded oil spill response facility based in Geelong, Victoria. AMOSC resources include:

- AMOSC spill response equipment stored at AMOSC and at other locations
- oil company equipment based at various locations
- trained industry response (“Core Group”) personnel

AMOSC form part of Woodside’s First Strike and primary response strategy to a spill and will be deployed within 12 hours of notification. Only nominated Woodside personnel can request the assistance of and this is usually conducted via the Perth IMT. AMOSC can be placed on the levels of advice listed in **Table 11-14**. Information regarding activation and mobilisation is outlined in the OPEP (**Appendix D**).

Table 11-14: AMOSC advice levels

AMOSC Advice Level	Status	AMOSC Requirements
Level 1	Forward notice	<ul style="list-style-type: none"> ▪ Advise a potential problem. ▪ Provide or update data on oil spill. ▪ Update information on spill and advise 4-hourly.
Level 2	Standby	<ul style="list-style-type: none"> ▪ AMOSC resources may be required. ▪ Assessment of resources and destination to be made. ▪ Update information on spill and advise 2-hourly.
Level 3	Callout	<ul style="list-style-type: none"> ▪ AMOSC resources are required. ▪ Detail required resources and destination.

AMOSC maintains a core group of trained personnel from oil industry member companies around the country who are trained and regularly exercised in oil spill response operations. Access to the Core Group is via AMOSC.

The cooperative arrangements for response to oil spills by Australian oil and associated industries are brought together under the AMOSPlan. The AMOSPlan will be activated by Woodside when the response to an oil spill incident is regarded by Woodside as requiring resources beyond those of the company itself.

In the event that the oil spill response requires the call out of AMOSC’s own resources, the call out request is made directly to AMOSC by the Perth IMT. Should the response require mutual aid from equipment owned and personnel employed by another company, the request for assistance is made directly company to company via each company’s nominated Mutual Aid Contact.

In addition, Woodside will also be required to contact AMOSC to activate the Standing Agreement and the Service Contract (for the borrowing company), in the event that Woodside require equipment from another company.

11.11.5.2 Oil Spill Response Limited

Woodside is a member of the global OSRL group.

Updates on the availability of OSRL’s equipment availability is provided via a weekly Equipment Stockpile Status Report from OSRL’s website at <http://www.oilspillresponse.com/activate-us/equipment-stockpile-status-report>.

The Equipment Stockpile Status Report provides a quick and timely overview of the availability of OSRL’s equipment stockpile globally and is especially useful in assuring OSRL’s readiness. It also provides a vital overview of the resources that Woodside would be able to access in the event of a spill. Under OSRL’s Service Level Agreement, the first member who initiates mobilisation of OSRL will be entitled to a maximum 50% of the stockpile, while the second member is entitled to a maximum 50% of the remaining stockpile (and so on).

In addition to the Equipment Stockpile Status Report, OSRL provides a response equipment list that provides an

overview of the size, type and ancillaries required for the equipment that is available at their bases. To ensure efficient and timely response capability, OSRL also have also pre-packaged some of the equipment into loads ready for dispatch, that are suitable for general spill situations and operating environments.

The equipment list can also be found at http://www.oilspillresponse.com/files/OSRL_Equipment_List.pdf.

In addition to providing response equipment, OSRL also supply a selection of specialist staff who have the practical skill and experience to assist and support Woodside in a spill response and are trained in using the Incident Command System (ICS) structure. Response teams will comprise:

- Team Manager
- Operations Manager
- Senior technicians/ technicians

OSRL can be called upon to provide immediate technical advice and begin to mobilise personnel if required. OSRL would be called on to lead small specialist teams and/or provide supplementary labour and equipment if ongoing response is required. Any OSRL resources being mobilised from Singapore would be expected to be on the scene in Perth following notification by the CIMT in a similar timeframe to resources being mobilised from eastern Australia. Only nominated Woodside personnel may request the assistance of OSRL via the CIMT Leader.

11.11.5.3 Technical Support (Scientific Monitoring)

Woodside maintains a list of pre-approved vendors who can be called upon at short notice to provide environmental monitoring services in the event of an oil spill.

11.11.5.4 General Support

Woodside has arrangements in place and access to providers to supply personnel as required, for example 40-50 per provider to populate the response teams. Woodside has tested these arrangements and considers that personnel for shoreline clean-up operations can be sourced to match and maintain the consequence of a worst-case spill. Woodside will aim to mobilise shoreline crews prior to the predicted arrival of hydrocarbons. These crews will focus on pre-cleaning beach areas (e.g., removing debris such as seaweed to areas above the high tide mark) and establishing staging areas to enable a more efficient response when hydrocarbons are arriving ashore.

Additional labour resource requirements above the arrangements described for a temporary contract workforce can be drawn from the significant staff resources of Woodside's global petroleum operations. Woodside has current arrangements to mobilise and deploy up to 50 shoreline clean-up operations by Week 4. Additional resources than can be brought to an response post LD1 include the Woodside Burrup response team that consists of 27 trained responders based in Karratha

During the first strike response phase, Woodside will rely on the skilled personnel (i.e., AMOSC Core Group, OSRL) to supervise and lead any unskilled workforce. In addition, personnel from the National Response Team (NRT), Aerial Operation staff from Aerotech 1st response will be mobilised. OSRL may also supply a selection of ground staff who have the practical skills and experience to assist and support Woodside during a spill response and are trained in using the Incident Command System (ICS) structure.

Gaps in the trained personnel numbers during the sustained response phase would be filled by providing pre-mob training (1–2 days) to responders to skill up the workforce and reduce the dependency on the current trained personnel.

11.11.6 Spill Response Logistics

Coordination of logistical arrangements for the response will be the responsibility of the logistics section in the IMT (refer to **Section 11.11.4.2**) Woodside has a number of existing arrangements for the storage and transport of equipment in the Exmouth area, which will be initially used in a response. These arrangements include agreements with logistics providers for air, marine and land.

The current stockpile in Exmouth can be supplemented by regional resources within appropriate timeframes for the response. Woodside maintains a stockpile at King Bay Supply Facility, which is immediately available to support response operations. These resources involve the movement of personnel, freight and equipment over large distances.

Woodside has internal resources and utilises third-party logistics providers for movements of freight from overseas locations by air or sea. The Supply team, along with the specialist contractors, are highly experienced in procurement and supply chain management for large scale projects and ongoing offshore operational activities. These skills are directly transferable to a Level 2 response. Woodside has experience in moving large numbers of personnel over large distances during cyclone de-manning and for the construction phases of the Macedon project.

Freight logistics by road will utilise existing local contracts (i.e., Exmouth Freight and Logistics) and other local operators supplemented by larger regional providers (i.e., Centurion and Toll). Woodside has existing arrangements in place for large scale freight movements by road in the North West and has experience in moving large volumes of equipment.

Exmouth is a permanent home to 2,400 people although during tourist months the figure swells to up to 6,000. It is therefore accustomed to accommodating large influxes of people. Accommodation is likely to be a restraint in the response as the lack of suitable accommodation may restrict the numbers of responder personnel that could be brought into the region. There is a variety of accommodation options in Exmouth ranging from hotel/motel, backpacker, holiday home rental and caravan and camping sites.

Dampier and Karratha currently have additional accommodation with large accommodation villages (i.e., Gap village) previously used for large construction projects available. These facilities can be used to accommodate responders to address shorelines in the Onslow – Dampier region if required or as a base for long commute by road or air to locations further south.

The modelling indicates that islands may be affected by hydrocarbons in a Level 2 spill. Woodside has undertaken an assessment of the requirements that would be needed to support clean-up operations on these islands. A Tactical Response Plan has been developed for the Muiron Islands. Other islands in the worst-case spill EMBA have similar coastal characteristics and can expect similar scale of response in terms of personnel and equipment. Small commercial vessels/utility vessels can be used to access these islands; however, the preferred method would be the use of landing craft for transport of equipment and waste. Woodside has assessed that there are a number of suitable vessels that would be able to be contracted in a response that are operating regionally.

11.11.7 State and National Resources

In accordance with the State Hazard Plan – Maritime Environmental Emergency (SHP-MEE), and following consultation with the DoT, additional personnel to assist with labour intensive aspects of a response (if required) will be sourced through the State Response Team. Depending on the level of response required, sources of labour may include the local shire and DBCA.

Under the National Plan, a National Response Team (NRT), comprising experienced personnel from operator to senior spill response manager level from Commonwealth/State/NT agencies, industry and other organisations, has been developed.

The services of the NRT will be obtained through AMSA, which has made arrangements with the respective government and industry agencies, for the release of designated personnel for oil spill response activities. These services will be activated when it is assessed that an oil spill incident exceeds the resource availability at the state level.

During a National Plan incident, the Woodside Perth IMT or the Marine Pollution Controller appointed by a Control Agency may submit a request to AMSA for personnel from other States/NT to become part of the Incident Management Team or the incident response team.

A request should be made initially through the Environment Protection Duty Officer via the Joint Rescue Coordination Centre on 1800 641 792 or 02 6230 6811. This request must be followed by written confirmation (email: rccaus@amsa.gov.au) within three (3) hours of the verbal request.

The following information will be provided when making such a request:

- Roles or skills required (e.g., Planning Officer, Aerial Observer)
- Number of personnel required to fill each role
- Contact name, address, and time of where personnel are to initially report
- Brief overview of the work to be undertaken.

Suitable personnel will then be selected by AMSA from the National Response Team or the National Response Support Team (NRST) unless special circumstances exist.

11.11.8 Industry Resources

Woodside is a Full Member of AMOSC and as such has access to Industry Mutual Aid Arrangement equipment and National Plan equipment held as part of the contingency plans of the Australian Oil Industry and the Australian Government. AMOSC require confirmation from mobilisation authorities to access equipment listed under the National Plan.

All National Plan, AMOSC and those industry equipment resources that are registered with AMOSC, which are potentially available for response to an incident, are listed in the Marine Oil Spill Equipment System (MOSES) database. The MOSES database is a computer database that lists the type, quantity, location, status and availability of pollution control equipment. It is also used to manage audits, maintenance and repair of AMSA-owned equipment.

Normal requests for assistance are directed to AMOSC in Geelong to coordinate, but equipment may also be accessed through the MOSES database, or AMSA – Marine Environmental Protection Services (MEPS).

11.11.9 Government Agency Notification

Woodside response teams are hierarchical in nature, and response teams and resources are progressively activated depending on the severity of an incident. Government Agencies and Industry Organisations may also be mobilised (refer to Appendix A: First Strike Plan of the OPEP (**Appendix D**)). The Stybarrow decommissioning activities Relevant Persons Database will be used to maintain contact with identified relevant persons.

11.11.10 Industry Joint Venture Programmes

Woodside undertake Joint Venture Programmes with other operators and organisations including, but not limited to, Santos, Vermillion, DoT and AMOSC. These programmes aim to develop operational guidelines, operational tests, training processes and plans to inform and prepare oil spill response strategies. The programmes also provide guidance and training around First Strike incident plans, key operational considerations, understanding of shoreline sensitivities and lists of resources required to implement response.

11.11.11 Review and Testing of the OPEP

11.11.11.1 Control and Distribution of the OPEP

The Stybarrow Decommissioning and Field Management OPEP (**Appendix D**) shall be controlled as described by the Woodside PetDW Document Control Procedure (AOIM-0001). This procedure describes the process of approval, issue and withdrawal of PetDW controlled documents. The OPEP shall be issued as per the distribution list.

11.11.11.2 Review of the OPEP

The Environment Manager is responsible for assessing any changes and deciding if the changes require a resubmission of the OPEP under Section 17 of the Environment Regulations.

11.11.12 Emergency and Spill Response Drills and Exercises

Woodside's capability to respond to incidents will be tested periodically, in accordance with the Emergency and Crisis Management Procedure. The scope, frequency and objective of these tests is described in **Table 11-15**. Emergency response testing is aligned to existing or developing risks associated with Woodside's operations and activities. Corporate hazards/risks outlined in the corporate risk register, respective Safety Cases or project Risk Registers, are reference points developing and scheduling emergency and crisis management exercises. External participants may be invited to attend exercises (e.g., government agencies, specialist service providers, oil spill response organisations, or industry members with which Woodside has mutual aid arrangements).

The overall objective of exercises is to test procedures, skills and the teamwork of the Emergency Response and Command Teams in their ability to respond to major accident / major environment events. After each exercise, the

team holds a debriefing session, during which the exercise is reviewed. Any lessons learned or areas for improvement are identified and incorporated into revised procedures, where appropriate.

Table 11-15: Testing of response capability

Response Category	Scope	Response Testing Frequency	Response Testing Objective
Level 1 Response	Exercises are project-/ activity-specific	At least one Level 1 OPEP drill must be conducted during an activity. For campaigns with an operational duration of greater than one month this will occur within the first two weeks of commencing the activity and then at least every 6-month hire period thereafter.	Comprehensive exercises test elements of the Oil Pollution First Strike Plan. Emergency drills are scheduled to test other aspects of the Emergency Response Plan.
Level 2 Response	Exercises are project specific (CSV)	Level 2 Emergency Management exercises are relevant to activities with an operational duration of one month or greater. At least one Emergency Management exercise per campaign must be conducted within the first month of commencing the activity and then at every 6-month hire period thereafter, where applicable based on duration.	Testing both the facility IMT response and/or that of the CIMT following handover of incident control.
Level 3 Response	Exercises are relevant to all Woodside assets	The number of CMT exercises conducted each year is determined by the Chief Executive Officer, in consultation with the Vice President of Security and Emergency Management.	Test Woodside's ability to respond to and manage a crisis level incident.

11.11.13 Hydrocarbon Spill Testing of Arrangements

There are a number of arrangements which, in the event of a spill, will underpin Woodside's ability to implement a response across its petroleum activities. In order to ensure these arrangements are adequately tested, the Capability Development Team within Security and Emergency Management ensures tests are conducted in alignment with the Hydrocarbon Spill Testing of Arrangements Schedule.

Woodside's arrangements for spill response are common across its Australian operating assets and activities to ensure the controls are consistent. The overall objective of testing these arrangements is to ensure that Woodside maintains an ability to respond to a hydrocarbon spill, specifically to:

- Ensure relevant responders, contractors and key personnel understand and practise their assigned roles and responsibilities.
- Test response arrangements and actions to validate response plans.
- Ensure lessons learned are incorporated into Woodside's processes and procedures and improvements are made where required.

If new response arrangements are introduced, or existing arrangements significantly amended, additional testing is undertaken accordingly. Additional activities or activity locations are not anticipated to occur; however, if they do, testing of relevant response arrangements will be undertaken as soon as practicable.

In addition to the testing of response capability described in **Table 11-15**, up to eight formal exercises are planned annually, across Woodside, to specifically test arrangements for responding to a hydrocarbon spill to the marine environment.

11.11.13.1 Testing of Arrangements Schedule

Woodside's Testing of Arrangements Schedule (**Figure 11-5**) aligns with international good practice for spill preparedness and response management; the testing is compatible with the International Petroleum Industry

Environmental Conservation Association Good Practice Guide and the Australian Institute for Disaster Resilience (AIDR) Australian Emergency Management Arrangements Handbook. If a spill occurs, enacting these arrangements will underpin Woodside’s ability to implement a response across its petroleum activities.

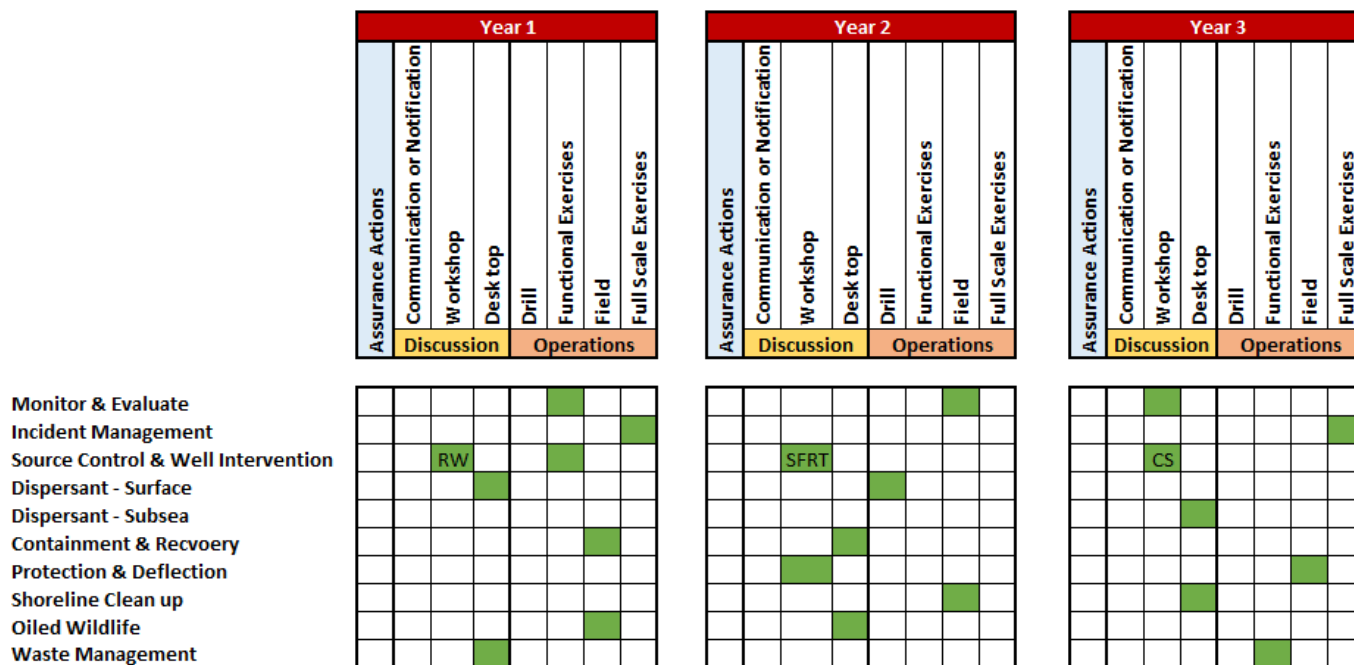


Figure 11-5: Indicative 3-yearly testing of arrangements schedule

The hydrocarbon spill arrangements shown in the rows of the schedule are tested against Woodside’s regulatory commitments. Each arrangement has a support agency/company and an area to be tested (e.g., capability, equipment and personnel). For example, an arrangement could be to test Woodside’s personnel capability for conducting scientific monitoring, or the ability of the Australian Marine Oil Spill Centre to provide response personnel and equipment.

The vertical columns relate to how hydrocarbon spill arrangements will be tested over the 3-year rolling schedule. The sub-heading for the column describes the standard method of testing likely to be undertaken (e.g., discussion exercise, desktop exercise), and the green cells indicate the arrangements that could be tested for each method.

Some arrangements may be tested across multiple exercises (e.g., critical arrangements) or via other ‘additional assurance’ methods outside the formal Testing of Arrangements Schedule that also constitute sufficient evidence of testing of arrangements (e.g., audits, no-notice drills, internal exercises, assurance drills).

11.11.14 Audits

11.11.14.1 Audits of External Oil Spill Response Organisations

A formal audit of OSROs is done by representatives of member companies annually. At the conclusion of an audit, improvement opportunities and corrective actions are formally noted and corrective actions assigned. In some instances, changes may be required to the OPEP, but changes will only be made in accordance with the Environment Regulations.

11.11.14.2 Audits of Internal Actions

Following an emergency spill incident there may be a requirement for legal and/ or other regulatory or formal HSE incident investigations to be conducted in accordance with the Woodside (PetDW) HSE Management System.

In addition to this, it is essential that the IMT response actions are reviewed as soon as practicable after an incident. The aim of the incident review is to identify any particular lessons that should be shared across the Company, and that can be used to improve the plans or response actions in the future.

Post-spill debriefs address:

- Spill causes, if known
- Spill response
- Speed
- Operation
- Effectiveness
- Equipment suitability
- Health and safety issues, as appropriate
- Integration of plan and procedures with other response organisations, consultants, and or agencies

11.11.15 Incident Reporting Requirements

Woodside employees and contractors are required to report all environmental incidents and non-conformance with commitments made in the EP. A computerised database is used for the recording and reporting of these incidents. Detailed investigations are completed for all actual and high potential environmental incidents. The classification, reporting, investigation and actioning of environmental incidents are undertaken in accordance with Woodside (PetDW) HSE Management System. Incident corrective actions are monitored and closed out in a timely manner. In addition to the internal notification and reporting requirements outlined above, the reporting requirements for environmental incidents are outlined in previous **Section 11.9**.

11.11.16 OPEP Consultation

The Woodside Hydrocarbon Spill Preparedness team shall consult with the WA Department of Transport (DoT) and the Australian Maritime Safety Agency (AMSA) during the development of the First Strike Plan to ensure appropriateness of selected response techniques. Following regulatory approval of the whole EP, copies of the First Strike Plan shall be forwarded to the following key Response Agencies:

- WA DoT Maritime Environmental Emergency Response (MEER) Unit
- AMSA
- AMOSC
- OSRL

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Appendix A Our Values and Biodiversity Policy

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.

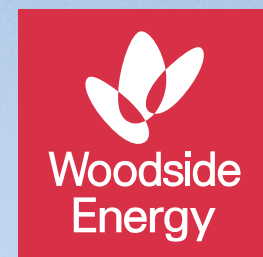
Build and maintain trust

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



OBJECTIVE

Woodside recognises the intrinsic value of nature and the importance of conserving biodiversity and ecosystem services to support the sustainable development of our society. We are committed to doing our part. We understand and embrace our responsibility to undertake activities in an environmentally sustainable way.

PRINCIPLES

Woodside commits to:

- Implementing a systematic approach to the management of the impacts and risks of our operating activities on an ongoing basis, including emissions and air quality, discharge and waste management, water management, biodiversity and protected areas.
- Applying the mitigation hierarchy principle (avoid, minimise, restore) and a continuous improvement approach to ensure we maintain compliance, improve resource use efficiency and reduce our environmental impacts.
- Embedding environmental and biodiversity management, and opportunities, in our business planning and decision making processes.
- Complying with relevant laws and regulations and applying responsible standards where laws do not exist.
- Not undertaking new exploration or development of hydrocarbons within the boundaries of natural sites on the UNESCO World Heritage List (as specified at 1 December 2022). Existing activity may continue if compatible with maintenance of the listed outstanding universal values.
- Not undertaking new exploration or development of hydrocarbons within IUCN Protected Areas (as specified at 1 December 2022) unless compatible with management plans in place for the area. Existing activity may continue if compatible with management plans in place for the area.
- Achieving net zero deforestation¹ associated with new projects that take a Final Investment Decision (FID) after 1 December 2022.
- Developing Biodiversity Action Plans for all new major projects (CAPEX >USD\$2 billion) that take a FID after 1 December 2022.
- Supporting positive biodiversity outcomes in regions and areas in which we operate.
- Setting targets and publicly reporting on our environmental and biodiversity performance.

APPLICABILITY

Responsibility for the application of this Policy rests with all Woodside employees, contractors and joint venturers engaged in activities under Woodside operational control. Woodside managers are also responsible for promotion of this Policy in non-operated joint ventures.

This Policy will be reviewed regularly and updated as required.

Approved by the Woodside Energy Group Ltd Board in December 2022.

¹ Definition of Forest: 'trees higher than 5 meters and a canopy cover of more than 10 percent on the land to be cleared'

Appendix B Relevant Legislation, Regulations and Other Requirements

Commonwealth Legislation and Regulations

Legislation or Regulation	Description	Relevance
<i>Australian Maritime Safety Authority Act 1990</i>	AMSA is a Commonwealth agency responsible for regulation of maritime safety, search and rescue, and ship sourced pollution prevention functions under the <i>Navigation Act 1912</i> (Cth), protection of the sea legislation, including the <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> (Cth) and subordinate legislation made pursuant to these Acts.	Applies to the use of any vessel associated with operations and is relevant to the activity in regard to the unplanned pollution from ships.
Australian Ballast Water Management Requirements (Commonwealth of Australia, 2020), Version 8	The Australian Ballast Water Management Requirements (Version 8) set out the obligations on vessel operators with regards to the management of ballast water and ballast tank sediment when operating within Australian seas.	Applies to all internationally sources vessels operating in Australian Waters which could have the potential for the introduction of IMS and potential ballast water exchange.
<i>Biosecurity Act 2015</i>	This Act is about managing diseases and pests that may cause harm to human, animal or plant health or the environment. The proposed amendments also strengthen Australia's ability to manage ballast water in ships. They will provide additional protection for coastal environments from the risk of marine pest incursions by fostering new ballast water treatment technologies and phasing out ballast water exchange.	Applies to all internationally sources vessels operating in Australian Waters which could have the potential for the introduction of IMS and potential ballast water exchange.
Biosecurity Regulation 2016	The Biosecurity Regulation prescribes a number of measures and obligations that are common between the <i>Biosecurity Act</i> . Pre-arrival reporting, cost recovery and the isolation and export power provisions all support business as usual activities that were available under the <i>Quarantine Act</i> and therefore represent no substantive change.	Applies to all internationally sources vessels operating in Australian Waters which could have the potential for the introduction of IMS and potential ballast water exchange.
<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.

Legislation or Regulation	Description	Relevance
<p><i>Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act)</i></p> <p>Environment Protection and Biodiversity Conservation Regulations 2000</p>	<p>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.</p> <p>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, 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.</p>	<p>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.</p> <p>Where activities have existing approvals under the Act, these will continue to apply.</p>
<p><i>Environment Protection (Sea Dumping) Act 1981</i></p> <p>Environment Protection (Sea Dumping) Regulations 1983</p>	<p>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 any 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.</p>	<p>Not relevant to this petroleum activity.</p> <p>However, prior to permanently leaving any structure in-situ under future decommissioning EPs, Woodside will obtain a Sea Dumping Permit in accordance with the requirements of the <i>Sea Dumping Act</i>.</p>
<p><i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i></p>	<p>Relates to controls over import and export of hazardous waste material. Permits are required to import waste into Australia.</p>	<p>Activity does not involve transboundary movement of hazardous wastes.</p>

Legislation or Regulation	Description	Relevance
<p><i>Industrial Chemicals (Notification and Assessment) Act 1989</i></p>	<p>The Act establishes the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) to regulate the supply of chemicals into Australia, and importers or manufacturers of chemicals or chemical products must comply. The Act involves assessing and registering industrial chemicals in a national scheme and applies to solvents, adhesives, plastics, laboratory chemicals and paints, as well as chemicals used in cleaning products. Chemicals are defined by exclusion: a substance is an industrial chemical if it is not an agricultural or veterinary product, medicine or medicinal product, food additive, contaminant or natural toxicant.</p>	<p>Chemicals are assessed to ensure they are ALARP and acceptable.</p>
<p>National Environment Protection (National Pollutant Inventory) Measure 1998</p>	<p>The National Pollutant Inventory (NPI) is a database established to provide information on substances being emitted to the air, land and water, and transported in waste. The inventory tracks the magnitude of emissions and the amounts transported in waste of 93 substances. While the NPI National Environmental Protection Measures (NEPM is a federal initiative, each state has legislation giving effect to the program.</p>	<p>The act enables implementation of NEPMs, which are a set of national objectives designed to assist in protecting or managing aspects of the environment. Requires demonstration that the activity will be performed in line with the principles of ecologically sustainable development, and that impacts and risks resulting from these activities relevant to NEPM national objectives are ALARP and acceptable.</p>
<p>National Greenhouse and Energy Reporting Act 2007</p>	<p>This Act provides for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy production and energy consumption, and for other purposes.</p>	<p>This Act applies to the atmospheric emissions through combustion engine use to operate the project vessels and associated with the activity. The Act aims to reduce the impact of GHG emissions associated with vessel use for the installation and commissioning activity, through compliance with MARPOL Annex VI (Marine Order 97: marine pollution prevention – air pollution) and require the use of low sulphur fuel.</p>
<p><i>Navigation Act 2012</i></p>	<p>This Act establishes framework for controls on navigation, marine safety and shipping for ships in Australian waters or territories primarily proceeding on international or interstate voyages.</p>	<p>Vessel movements will be governed by marine safety regulations and Marine Orders under the Act</p>
<p>Navigation (Orders) Regulations 1980</p>	<p>Details the penalty where Marine Orders are prescribed as 'Penal Provisions'.</p>	<p>Vessel movements will be governed by marine safety regulations and Marine Orders under the Act</p>

Legislation or Regulation	Description	Relevance
Marine Orders	Marine Orders are subordinate rules made pursuant to the <i>Navigation Act 1912</i> and <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> affecting the maritime industry. They are a means of implementing Australia's international maritime obligations by giving effect to international conventions in Australian law.	Vessel movements, safety, discharges and emissions will be governed by the Marine Orders
Marine Order 32 – Cargo Handling Equipment	Marine Order 32 relates to loading and unloading of cargo, and the safe transfer of persons, from ships, off-shore industry vessels and off-shore industry mobile units.	Unloading of cargo, and the safe transfer of persons, from ships, offshore industry vessels will be governed by Marine Order 32.
Marine Order 41 Carriage of Dangerous Goods	MO41 gives effect to Part A Chapter VII of SOLAS, in particular the International Maritime Dangerous Goods Code (IMGDC) which deals with the carriage of dangerous goods in packaged form, together with prescribing other matters related to carriage of dangerous goods in ships, notice of intention to ship dangerous goods, and provisions related to the loading, stowing, carriage or unloading in ships of cargo.	Carriage of dangerous goods on vessels will be governed by Marine Order 41.
Marine Order 58 – International Safety Management Code	MO58 specifies the requirements of the International Safety Management (ISM) Code and gives effect to Chapter IX of SOLAS. The purpose of the ISM Code is to provide an international standard for the safe management and operation of ships and for pollution prevention.	Applies to management and operation of vessels.
Marine Order 59 – Offshore Industry Supply Vessels	MO59 specifies a number of performance-based requirements for safe navigation and a safe system of operations for off-shore industry vessel operations, including arrangements for safe operations during emergencies. The Order specifies guidelines considered to satisfy these performance-based requirements. The Order also allows alternative practices to be considered and approved as equivalent to those practices in the specified guidelines (NWEA Guidelines). MO59 applies to vessels not registered in Australia, if vessel is engaged in operations associated with or	Applies to safe navigation and a safe system of operations of vessels.

Legislation or Regulation	Description	Relevance
	incidental to petroleum exploration or production activity.	
Marine Order 91 – Marine Pollution Prevention – Oil	MO91 gives effect to Annex I of the International Convention for the Prevention of Pollution from Ships 1973, as amended by the Protocol of 1978 (MARPOL 73/78).	Applies to pollution prevention on vessels.
Marine Order 93 – Marine Pollution Prevention – Noxious Liquid Substances	MO93 gives effect to Annex II of the International Convention for the Prevention of Pollution from Ships 1973, as amended by the Protocol of 1978 (MARPOL 73/78). Details the discharge criteria and measures for the control of pollution by noxious liquid substances carried in bulk. It subdivides substances into and contains detailed operational standards and procedures. Some 250 substances are appended to the London Convention. The discharge of their residues is allowed only to reception facilities until certain concentrations and conditions (which vary with the category of substances) are compiled with. In any case, no discharge of residues containing noxious substances is permitted within 12 miles of the nearest land.	Applies to operational discharges from vessels.
Marine Order 94 – Marine Pollution Prevention – Package Harmful Substances	MO94 gives effect to Annex III of the International Convention for the Prevention of Pollution from Ships 1973, as amended by the Protocol of 1978 (MARPOL 73/78) in relation to packaged harmful substances.	Applies to waste management and pollution prevention on vessels.
Marine Order 95 - Marine Pollution Prevention - Garbage	MO95 gives effect to Regulation 8 of Annex V (dealing with port State control on operational requirements) and prescribes matters in relation to Regulation 9 of Annex V (dealing with placards, garbage management plans and garbage record-keeping) to the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78).	Applies to operational discharges and waste management on vessels.
Marine Order 96 Marine Pollution Prevention – Sewage	MO96 sets out MARPOL requirements in relation to survey and certification requirements; how sewage should be treated or held aboard ship; and	Applies to operational discharges from vessels.

Legislation or Regulation	Description	Relevance
	the circumstances in which discharge into the sea may be allowed.	
Marine Order 97 – Marine Pollution Prevention – Air Pollution	MO96 sets out MARPOL requirements in relation to air pollution.	Applies to air pollution from vessels.
<i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>	<p>Legislation concerning Australian offshore petroleum exploration & production in Commonwealth Waters. National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is an independent safety and environmental management Authority funded by levies on industry participants and regulates matters with powers conferred directly from OPGGS Act and via Regulations concerned with:</p> <ul style="list-style-type: none"> • occupational health & safety law at facilities and offshore operations under Schedule 3 • environmental management • structural integrity of Wells under Resource management regulations. <p>NOPSEMA may also declare a 500 metre petroleum safety zone around wells associated with drilling operations.</p>	Applies to the activity assessed under this Environment Plan.
Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009	<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, including associated OPEPs (previously oil spill contingency plans) • investigation of accidents, occurrences and circumstances with regard to deficiencies in environmental management. 	Applies to the activity assessed under this Environment Plan.
<i>Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Act 2003</i>	Act to impose levies relating to the regulation of offshore petroleum activity, including well levies and environment plan levy.	A levy will be applied to the petroleum activity under this EP.

Legislation or Regulation	Description	Relevance
Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Regulations 2004	Regulations prescribing the amount and method of calculation for imposition of levies relating to the regulation of offshore petroleum activity, including well levies and environment plan levy.	A levy will be applied to the petroleum activity under this EP.
<i>Ozone Protection and Synthetic Greenhouse Gas Management Act 1989</i>	This Act gives effect to Australia's obligations under the Vienna Convention and the Montreal Protocol by introducing, a system of controls on the manufacture, import and export of substances that deplete ozone in the atmosphere and synthetic greenhouse gases.	The activity does not include import, export or manufacture activities of ODS. Applies where ODS is found on vessel refrigeration systems; however, this is a rare occurrence.
Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995	Regulation contains controls relating to: import/export/manufacture licensing; manufacture and disposal of scheduled substances; refrigeration and air-conditioning; methyl bromide; and fire protection; import and export of any products and equipment containing hydrofluorocarbons, perfluorocarbons and SF6; and a requirement for importers and manufacturers to pay a levy incorporating a carbon charge component based on the equivalent carbon price.	The activity does not include import, export or manufacture activities of ODS. Applies where ODS is found on vessel refrigeration systems; however, this is a rare occurrence.
<i>Protection of the Sea (Powers of Intervention) Act 1981</i>	Act authorises AMSA to take measures for the purpose of protecting the sea from pollution by oil and other noxious substances discharged from ships and implements the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties and the Protocol relating to Intervention on the High Seas in Cases of Pollution by Substances other than Oil. Act enables AMSA to take measures on the high seas to prevent, mitigate or eliminate the danger apparent upon a maritime casualty where there is grave and imminent danger to the coastline of Australia, or to the related interests of Australia from pollution or threat of pollution of the sea by oil which may reasonably be expected to result in major harmful consequences. Similar powers apply in relation to a ship which is in internal waters, is in the Australian coastal sea, or any Australian ship on the high seas where oil or a noxious substance	This Act applies to vessel discharges and movements associated with the activity.

Legislation or Regulation	Description	Relevance
	is escaping and gives AMSA power to take such measures as it considers necessary to achieve a number of objectives detailed in the Act.	
<i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>	Act administered by AMSA, deals with the protection of the marine environment from ship-sourced pollution. The Act implements the International Convention for the Prevention of Pollution from Ships 1973 and the subsequent 1978 Protocol to the Convention (collectively MARPOL 73/78) and setting operational and construction standards for ships to prevent pollution and regulating normal operational discharges from ships. MARPOL 73/78 annexes regulate the discharge of oil (Annex I), noxious liquid substances (Annex II), the disposal from ships of sewage (Annex IV) and garbage (Annex V) and prohibit the disposal of harmful substances carried by sea in packaged forms (Annex III).	This Act applies to vessel discharges and movements associated with the activity.
Protection of the Sea (Prevention of Pollution from Ships) (Orders) Regulations 1994	Sets penalty levels for non-compliance.	Relates to vessel non-compliance to Marine Orders.
<i>Protection of the Sea (Civil Liability of Bunker Oil Pollution Damage) Act 2008</i>	This Act implements the requirements for the International Convention on Civil Liability for Bunker Oil Pollution Damage.	This Act applies to diesel refuelling which may be performed at sea as part of the activity.
<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	Anyone who finds the remains of a vessel or aircraft, or an article associated with a vessel or aircraft, needs to notify the relevant authorities, as soon as possible but ideally no later than after one week, and to give them information about what has been found and its location.

Legislation or Regulation	Description	Relevance
	<p>ship. The Act also enables the Minister to declare protected zones around historic shipwrecks. 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.</p>	

Western Australian Legislation and Regulations

Legislation or Regulation	Description
<i>Aboriginal Heritage Act 1972</i>	Enacted to ensure all Aboriginal cultural heritage within Western Australia could be properly protected and preserved. The Act provides recognition, protection and preservation of Aboriginal sites in Western Australia. It is an offence under Section 17 of the Act to excavate, destroy, damage, conceal, or in any way alter an Aboriginal site.
<i>Conservation and Land Management Act 1984</i>	DBCAs are responsible for the day-to-day management of marine parks vested with Marine Parks and Reserves Authority (MPRA) and provide administrative support to the MPRA. MPRA is responsible for the preparation of management plans for all lands and waters which are vested in it. Marine nature reserves, marine parks and marine management areas are the three reserve categories vested in the MPRA. Offshore operations must comply with specific marine park conditions when navigating or conducting activities in or near areas designated as marine sanctuaries for conservation, recreational, ecological, historical, research, educational, or aesthetic qualities, such as Ningaloo Marine Park (state waters) (Class A reserve) and Muiron Islands Marine Management Area.
Conservation and Land Management Regulations 2002	Details further requirements for protection of flora and fauna including restrictions on approaches to fauna, fishing restrictions and operation of vessels in marine protected areas. Also includes prohibition of pollution in marine protected areas.
<i>Dangerous Goods Safety Act 2004</i>	Act relating to the safe storage, handling and transport of dangerous goods and for related purposes.
Dangerous Goods Safety (Explosives) Regulations 2007	Relevant to storage and handling of explosives on marine support vessels.
Dangerous Goods Safety (Goods in Ports) Regulations 2007	'Goods in Ports' Regulations give legal status to the provisions of Australian Standard AS 3846 The handling and transport of dangerous cargoes in port areas. Requires classification of Dangerous Goods loads based on the International Maritime Dangerous Goods Code (IMDG) rather than ADG Code. Additional requirements are for safety management and emergency plans.
Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007	Regulations adopt NOHSC Standard for the Storage and Handling of Workplace Dangerous Goods. Western Australia has retained a licensing system for dangerous goods. In relation to dangerous goods, 'handling' includes manufacture, process, pack, use, sell, supply, carry and disposal of dangerous goods. References to the Australian Dangerous Goods Code (the ADG Code) in the regulations relate to the 7th edition of the ADG Code.
<i>Emergency Management Act 2005</i>	WestPlan-MTE details the emergency management arrangements relating to the prevention of, preparation for, response to and recovery from Marine Transport Emergencies that occur in WA waters.
Emergency Management Regulations 2006	DoT Marine Safety is the prescribed Hazard Management Agency for response under the Emergency Management Regulations 2006 for all emergencies in which there is an actual or impending event involving a ship that is capable of causing loss of life, injury to a person or damage to the health of a person, property or the environment.

Legislation or Regulation	Description
<i>Environmental Protection Act 1986</i>	Act contains measures for preventing or minimising pollution, which includes a general prohibition against pollution. Applicable areas include discharge of operational waste (sewage, galley waste) and oily water from vessels, gaseous emissions from diesel engines and ballast water exchange and discharge.
Environmental Protection Regulations 1987	Prescribes further matters to give effect to the Act including control of pollution and licence fees.
Environmental Protection (Controlled Waste) Regulations 2004	Specifies classes of hazardous wastes and the associated disposal requirements.
Environmental Protection (Unauthorised Discharges) Regulations 2004	Prescribes further details of materials that are prohibited from discharge into the environment.
<i>Fish Resources Management Act 1994</i> Fish Resources Management Regulations 1995	Act establishes framework for management of fishery resources. Commercial fishing is licensed or under a Fisheries Management Plan. Fisheries in WA waters are subject to the Act and include a wide range of aquatic organisms, other than protected species. Threatened aquatic species may be protected under State and Commonwealth biodiversity conservation laws. Department of Fisheries manages commercial and recreational fishing in Western Australia within four regions: the West Coast, Gascoyne, South Coast and North Coast. The Act also has power to declare Fish Habitat Protection Areas.
<i>Marine and Harbours Act 1981</i>	Act to provide for the advancement of efficient and safe shipping and effective boating and port administration through the provision of certain facilities and services.
Marine and Harbours (Fuelling) Regulations 1985	Refuelling businesses in ports to be licensed.
<i>Maritime Archaeology Act 1973</i>	The WA <i>Maritime Archaeology Act 1973</i> protects maritime archaeological sites in state waters, such as bays, harbours and rivers. Other than shipwrecks, it includes single relics, such as an anchor, and land sites associated with exploration, early settlements, whaling and pearling camps and shipwreck survivor camps.
<i>Pollution of Waters by Oil and Noxious Substances Act 1987</i>	Act relating to the protection of the sea and certain waters from pollution by oil and other noxious substances discharged from ships and places on land.
<i>Port Authorities Act 1999</i>	Local Pilotage Directions apply to vessels navigating within declared ports such as the Dampier Port Authority (DPA) port limits however DPA complies with the <i>Port Authorities Act 1999</i> (WA) and Port Authorities Regulations 2001 (WA) Part 3. The Regulations take precedent over Port Directions in the event of any conflict.
Port Authorities Regulations 2001	Pilotage services within the Port are licensed by DPA in the form of a pilotage provider's licence issued under the terms of the Port Authorities Regulations 2001.
Port of Dampier Marine Notice (002/2005)	Addresses sewage and putrescible waste discharge requirements whilst vessel in Port of Dampier.
<i>Shipping and Pilotage Act 1967</i>	Act relating to shipping and pilotage in and about the ports, fishing boat harbours and mooring control areas of the State.
Navigable Waters Regulations 1958	Prescribes further matters on navigational safety in WA waters, use of jetties, obstruction and wrecks, berthing and mooring of vessels.

Legislation or Regulation	Description
<i>Western Australian Marine (Sea Dumping) Act 1981</i>	An Act to provide for the protection of the environment by regulating the dumping into the sea, and the incineration at sea, of wastes and other matter and the dumping into the sea of certain other objects.
Western Australian Marine (Sea Dumping) Regulations 1982	Primarily concerns fees and prescribed information for reports of dumping.
<i>Western Australian Marine Act 1982</i>	Before any commercial vessel can operate in the State of Western Australia, the vessel is required to have onboard a valid Certificate of Survey. Certificate of Survey is only issued when the vessel satisfactorily complies with the <i>Western Australian Marine Act</i> in respect to its hull, machinery and equipment and is crewed according to the <i>Western Australian Marine Act 1982</i> .
WA Marine (Surveys and Certificates of Survey) Regulations 1983	Marine Safety is responsible for approving plans, inspecting, approving construction and carrying out periodical surveys of all commercial vessels under WA jurisdiction, be they passenger carrying, trading, fishing, or offshore industry vessels.
W.A. Marine (Certificates of Competency and Safety Manning) Regulations 1983	Marine Safety is responsible for administering national and internationally agreed competency standards; and for the examination of candidates for commercial Certificates of Competency as master, mate or engineer in WA vessels.
Prevention of Collisions at Sea Regulations 1983	Regulations largely comprise the Rules set out in the International Regulations for Preventing Collisions at Sea 1972 (COLREGs) applicable in state and internal waters.
<i>Wildlife Conservation Act 1950</i> Wildlife Conservation Regulations 1970	An Act to provide for the conservation and protection of wildlife.
Wildlife Conservation (Specially Protected Fauna) Notice 2006	Declaration of specially protected fauna in WA, including fauna that is rare or is likely to become extinct. List includes over 199 species, itemising scientific and common name.

International Conventions

International Convention	Description
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.
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.
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.
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 the Act. Migratory species are MNES.
Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001	The convention prohibits the use of harmful organotins in anti-fouling paints used on ships and establishes a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems. The Commonwealth <i>Protection of the Sea (Harmful Anti-fouling Systems) Act 2006</i> and subsidiary Marine Order give effect to the Convention.
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention)	The London Convention is an agreement to control pollution of the sea by dumping. The Commonwealth <i>Environment Protection (Sea Dumping) Act 1981</i> gives effect to the London Convention.
Convention on Wetlands of International Importance (Ramsar Convention)	The Ramsar Convention provides for the conservation and sustainable use of wetlands. The EPBC Act gives effect to the Ramsar Convention by providing specific protection for wetlands recognised by the Convention under Part 3 of the EPBC Act. These wetlands are termed "wetlands of international importance" and are MNES.
International Convention for the Control and Management of Ships' Ballast Water and Sediment, 2004	The Convention aims to prevent the spread of harmful aquatic organisms from one region to another via ballast water and sediment. The Commonwealth <i>Biosecurity Act 2015</i> gives effect to the Convention.

International Convention	Description
International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL 73/78)	<p>MARPOL 73/78 aims to minimise pollution of the sea from ships. All ships flagged under countries that are signatories to MARPOL 73/78 are subject to its requirements, regardless of where they sail. Member nations are responsible for vessels registered on their national ship registry. Several Annexes apply directly to offshore petroleum activities:</p> <ul style="list-style-type: none"> • MARPOL 73/78 Annex I (Prevention of pollution by oil), • MARPOL 73/78 Annex II (Control of pollution by noxious liquid substances in bulk), • MARPOL 73/78 Annex III (Prevention of pollution by harmful substances carried by sea in packaged form), • MARPOL 73/78 Annex IV (Pollution by sewage from ships), • MARPOL 73/78 Annex V (Pollution by garbage from ships), • MARPOL 73/78 Annex VI (Prevention of air pollution from ships). <p>The Commonwealth <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> and subsidiary Marine Orders give effect to MARPOL 73/78.</p>
International Convention for the Safety of Life at Sea 1974 (SOLAS Convention)	<p>The SOLAS Convention sets minimum safety standards for construction, equipment and operation of merchant ships. The convention requires signatory flag states to ensure that ships flagged by them comply with these standards as a minimum. The Commonwealth <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the convention.</p>
International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW Convention)	<p>The STCW Convention sets out minimum standards for masters, officers and watch personnel on merchant vessels. The Commonwealth <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the convention.</p>
International Regulations for Preventing Collisions at Sea 1972 (COLREGS)	<p>The COLREGS outline internationally recognised navigation rules to be used by vessels at sea to avoid collisions. The regulations are published by the International Maritime Organization (IMO). The Commonwealth <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the regulations.</p>
Minamata Convention on Mercury (Minamata Convention)	<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>
The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1972 (Basel Convention)	<p>The Basel Convention reduces the movement of hazardous wastes (excluding radioactive wastes) between nations, particularly from developed to less developed countries. The Commonwealth <i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i> gives effect to the convention.</p>

Industry Standards, Codes of Practice, Guidelines and Commonwealth Guidance Material

Industry Standards, Codes of Practice, Guidelines and Commonwealth Guidance Material
AMSA Technical guidelines for preparing contingency plans for marine and coastal facilities (2015)
AMSA National Plan for Maritime Environmental Emergencies (the NatPlan)
APPEA Australian Offshore Titleholder's Source Control Guideline (June 2021)
Australia's Oceans Policy - Western Australia South-West, Western-Central and North-West Marine Plans
Australian Petroleum Production and Exploration Association (APPEA) Code of Practice 2008
Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000
Australian Ballast Water Management Requirements, Version 8, 2020
Australian National Guidelines for Whale and Dolphin Watching 2005
EPBC Act Policy Statement 2.1 - Interactions between Offshore Seismic Activities and Whales (May 2007)
DAWR Offshore Installations - Biosecurity Guide (2019)
DCCEEW Policy Statement: 'Indirect consequences' of an action: Section 527E of the EPBC Act (2013): https://www.environment.gov.au/system/files/resources/f96c4a92-ffb1-4b77-befe-e2fd9130b0d8/files/epbc-act-policy-indirect-consequences.pdf
DCCEEW Draft Guidelines to Protect Underwater Cultural Heritage (2023)
Guidelines on Minimising Acoustic Disturbance to Marine Fauna 1997 – WA Department of Mines and Petroleum
IOGP Risk Assessment Data Directory: Blowout Frequencies, September 2019
IOGP Report 592 - Subsea Capping Response Time Model Toolkit User Guide
IOGP Report 594 - Subsea Well Source Control Emergency Response Planning Guide for Subsea Wells (2019)
National Biofouling Management Guidance for the Petroleum Production and Exploration Industry 2009
National Light Pollution Guidelines for Wildlife, January 2020
National Marine Safety Committee principal technical standard, the National Standard for commercial vessels. National Standard for Commercial Vessels (NSCV)
National Strategy for Ecologically Sustainable Development 1992
National Maritime Emergency Response Arrangement (NMEMA)
NOPSEMA (2012). Control Measures and Performance Standards Guidance Note. N040300-GN0271 Revision No. 4. December 2012
NOPSEMA (2020). Information Paper: Reducing Marine Pest Biosecurity Risks through Good Practice Biofouling Management, N04750-IP1899, Rev 1, March 2020

Industry Standards, Codes of Practice, Guidelines and Commonwealth Guidance Material

NOPSEMA Guidance note: Environment plan content requirements – (GN1344) 11.9.2020

NOPSEMA Guidance note: petroleum activity and Australian marine parks – (GN1785) 3.6.2020

NOPSEMA Guidance note: Oil pollution risk management – Rev 2 (GN1488) (2018)

NOPSEMA Guidance note: Notification and reporting of environmental incidents – (GN0926) 8.6.2020

NOPSEMA Guidance note: ALARP – Rev 6 (GN0166) (2015)

NOPSEMA Policy: Environment plan assessment - (PL1347) 19.5.2020

NOPSEMA Guideline: Environment plan decision making – Rev 7 (GL1721) (2021)

NOPSEMA Guideline: Making submissions to NOPSEMA – (GL0255) 4.5.2020

NOPSEMA Guideline: Consultation with Commonwealth agencies with responsibilities in the marine area (GL1887) 3.7.2020

NOPSEMA Information paper: Operational and scientific monitoring programs – Rev2 (IP1349) (2016)

NOPSEMA Information Paper: Source Control Planning and Procedures (2021)

NOPSEMA Bulletin #1: Oil Spill Modelling – Rev 0 (A652993) (2019)

NOPSEMA Bulletin #2: Clarifying Statutory Requirements and Good Practice Consultation – Rev 0 (A696998) (2019)

NOPSEMA Explanatory Note: Australian dispersant acceptance process (N-04750-IP1597 A446655) (06/07/2020)

NOPSEMA Policy Section 572 Maintenance and removal of property (N-00500-PL1903) 20/11/2020

This document sets out the principles that NOPSEMA will apply in compliance oversight, and where necessary, enforcement of Section 572 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGGS Act) which requires titleholders to:

- Maintain all structures, equipment and property in a title area in good condition and repair
- Remove all structures, equipment and property when it is neither used nor to be used in connection with operations authorised by the title.

Offshore Petroleum Industry Guidance Note; Marine Oil pollution: Response and Consultation Arrangements (Western Australian Department of Transport, July 2020).

SPE Technical Report; Calculation of Worst-Case Discharge (WCD), Rev 1 2016 (Society of Petroleum Engineers, 2015)

Appendix C 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.

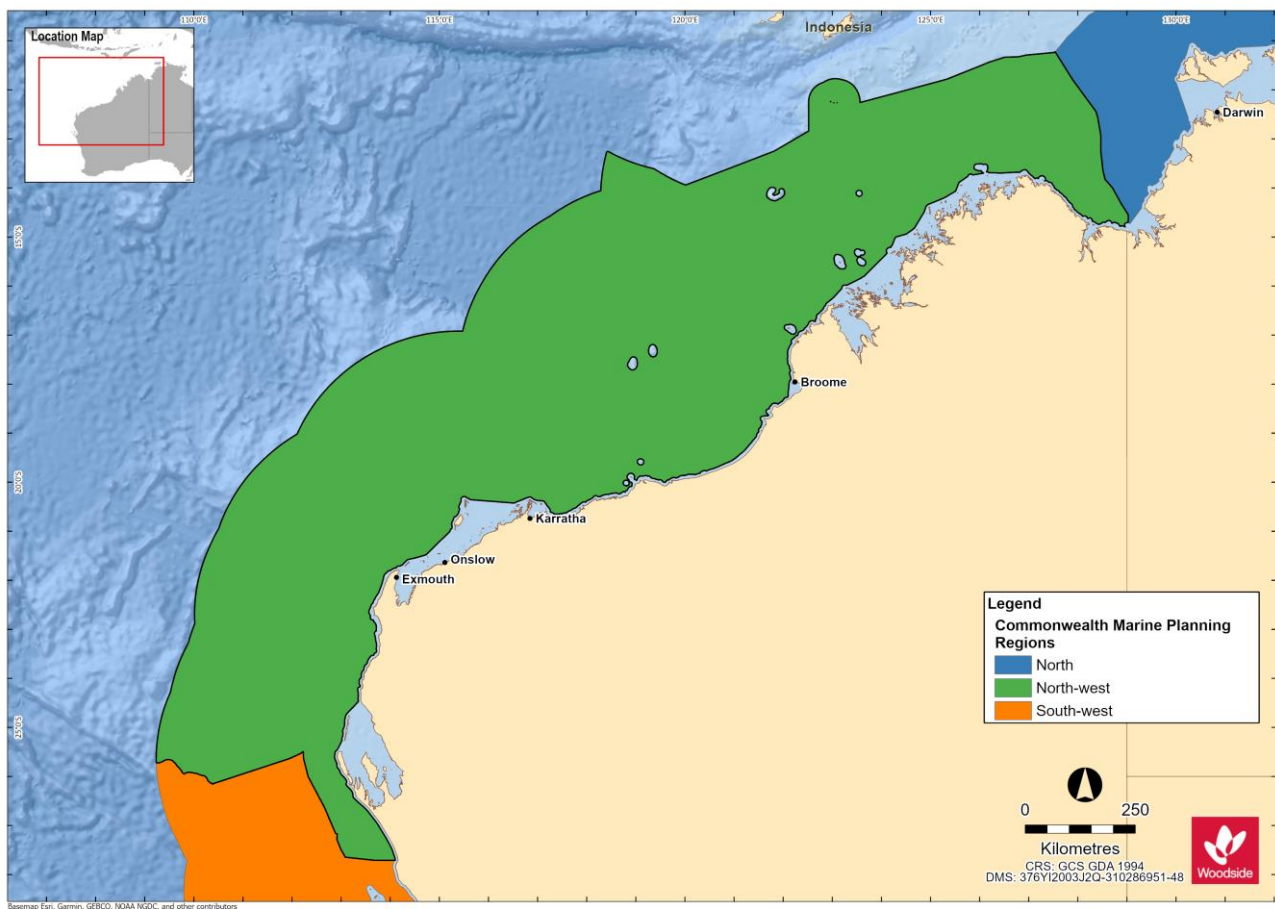


Figure 1-1. Marine Bioregions: North-west (NWMR), South-west (SWMR) and North (NMR)

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**.

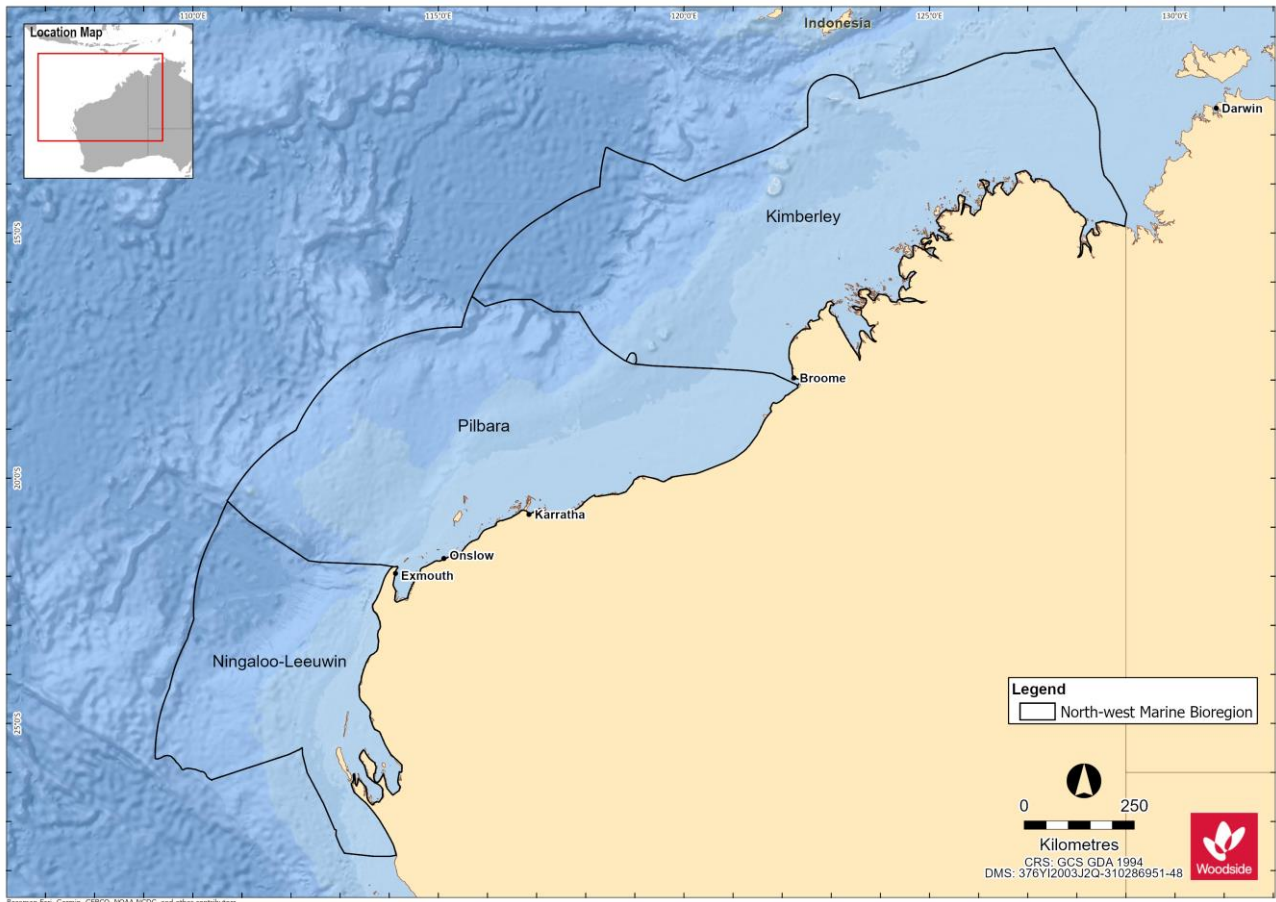


Figure 2-1. The marine systems of the North-west Marine Region (NWMR)

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	<p>The major surface currents influencing north-west WA flow towards the poles and include the Indonesian Throughflow, the Leeuwin Current, the South Equatorial Current, and the Eastern Gyral Current. The Ningaloo Current, the Holloway Current, the Shark Bay Outflow, and the Capes Current are seasonal surface currents in the region. Below these surface currents are several subsurface currents, the most important of which are the Leeuwin Undercurrent and the West Australian Current. These subsurface currents flow towards the equator in the opposite direction to surface currents (DEWHA, 2007a). Refer to Figure 2-6.</p> <p>The offshore waters of the NWMR are characterised by surface and subsurface boundary currents that flow along the continental shelf/slope and are enhanced through inflows from the ocean basins and are an important conduit for the poleward heat and mass transport along the west coast (Wijeratne <i>et al.</i>, 2018).</p> <p>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).</p>
Waves	<p>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).</p> <p>The NWS within the NWMR is a known area of internal wave generation. Both internal tides and internal waves are thought to be more prevalent during summer months due to the increased stratification of the water column (DEWHA, 2007a).</p> <p>Along the continental slope of the NWMR, strong internal waves and interaction between semi-diurnal tidal currents and seabed topographic features facilitates upwelling events and localised productivity events (Holloway, 2001).</p>
Tides	<p>Tides on the NWS (NWMR) increase as the water moves from deep towards the shallower coast. The highest offshore tides are experienced at the border of the Browse and Canning basins. The smallest tides are experienced at the Exmouth Plateau, near the coast.</p> <p>Tides of NWS (NWMR) are predominantly semi-diurnal (two highs and two lows each day), but with increasing importance of the diurnal (once per day) inequality at the southern and northern extremities of the NWS.</p>

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).

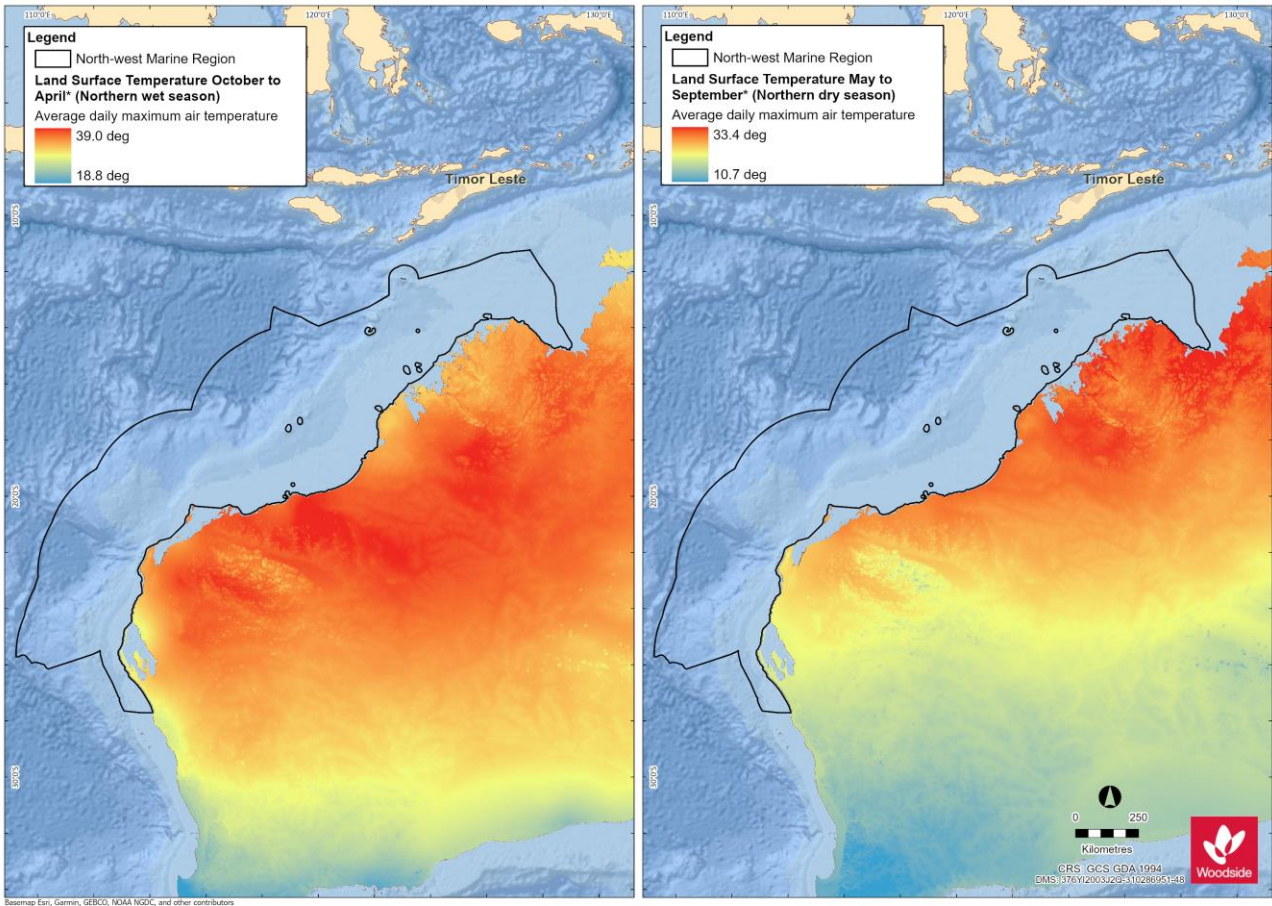


Figure 2-2. Average daily maximum air temperature for land surface adjacent to NWMR: (a) summer (northern wet season) and (b) winter (northern dry season)

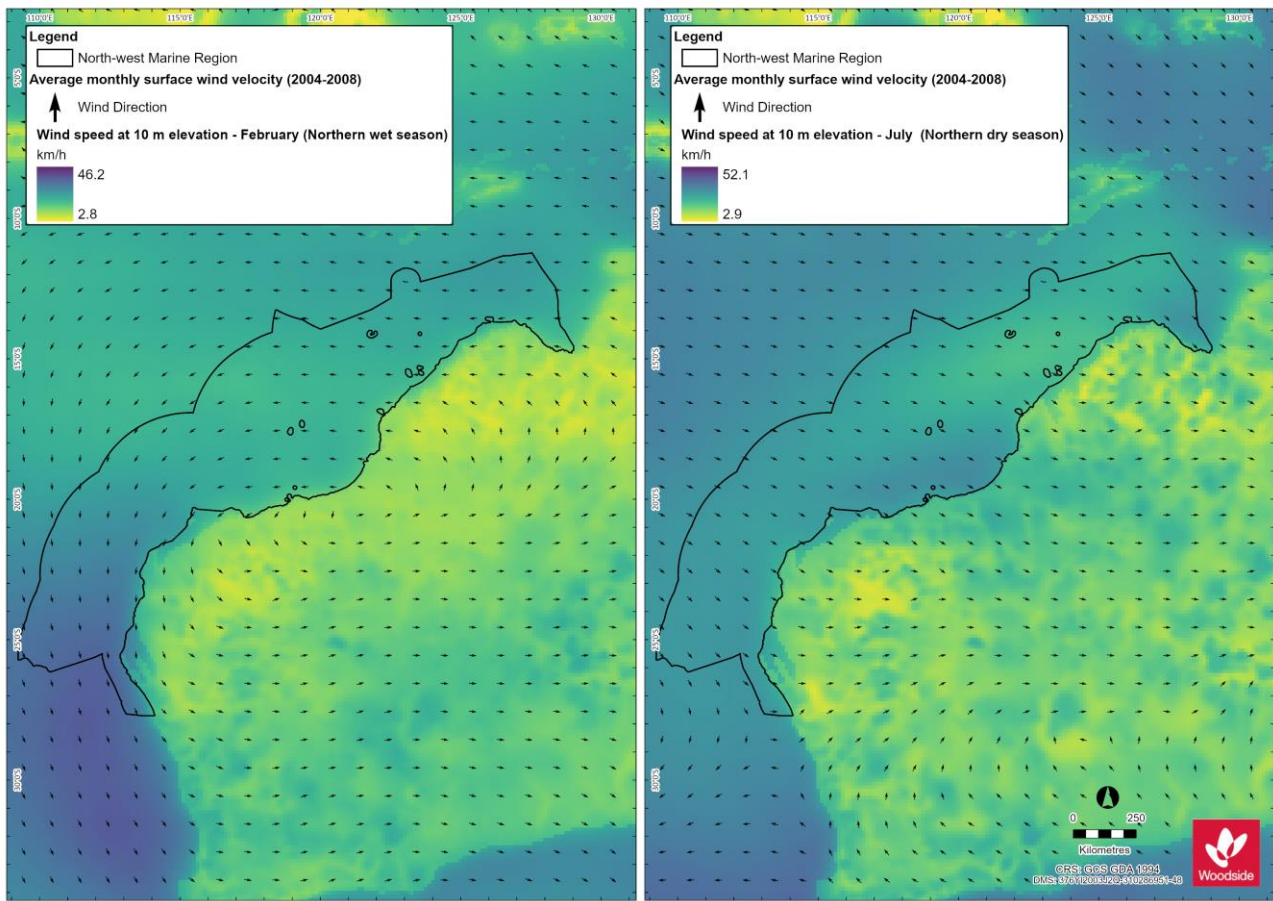


Figure 2-3. Average monthly surface wind direction and velocity for NWMR: (a) summer (February, northern wet season) and (b) winter (July, northern dry season)

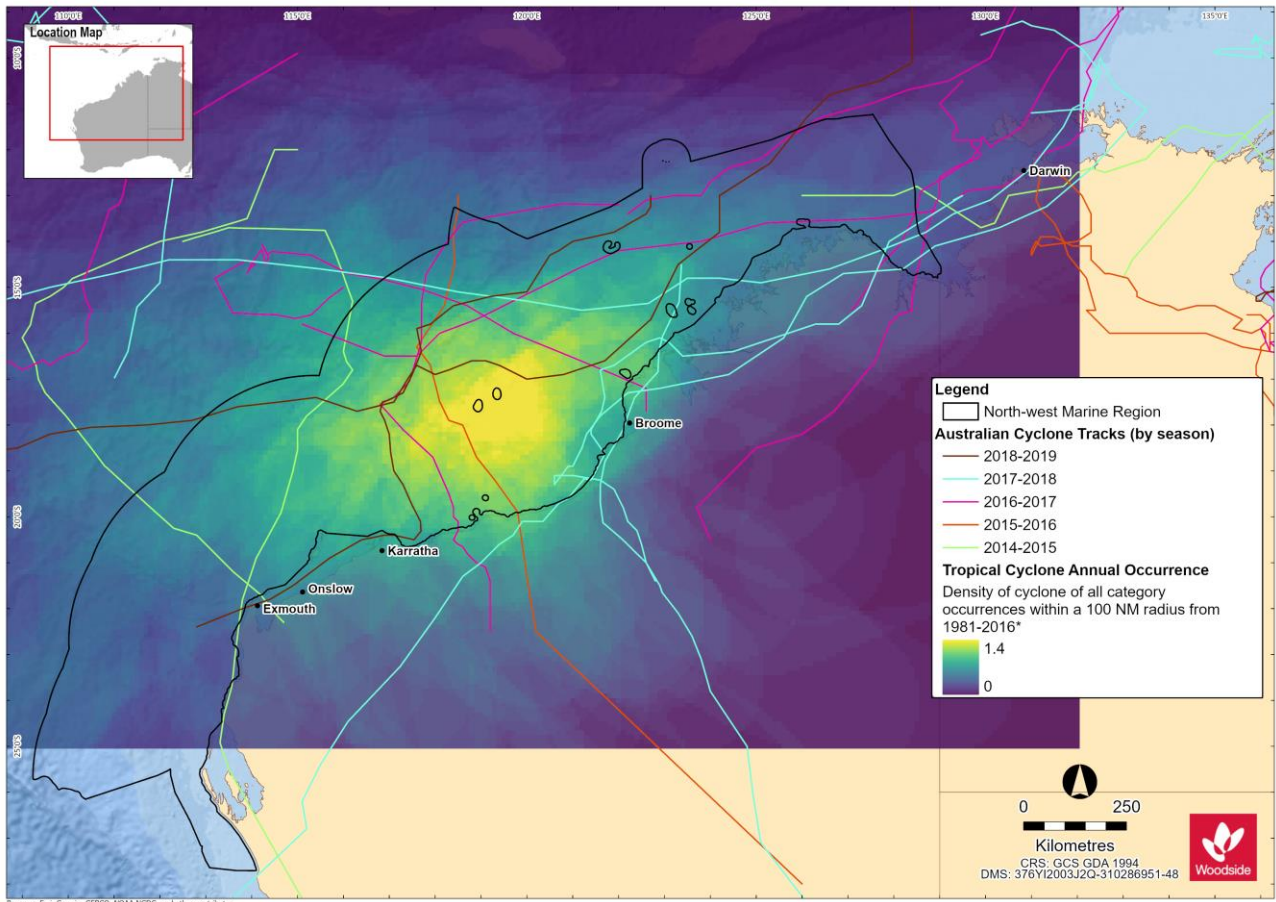


Figure 2-4. Tropical cyclone annual occurrence and cyclone tracks for NWMR

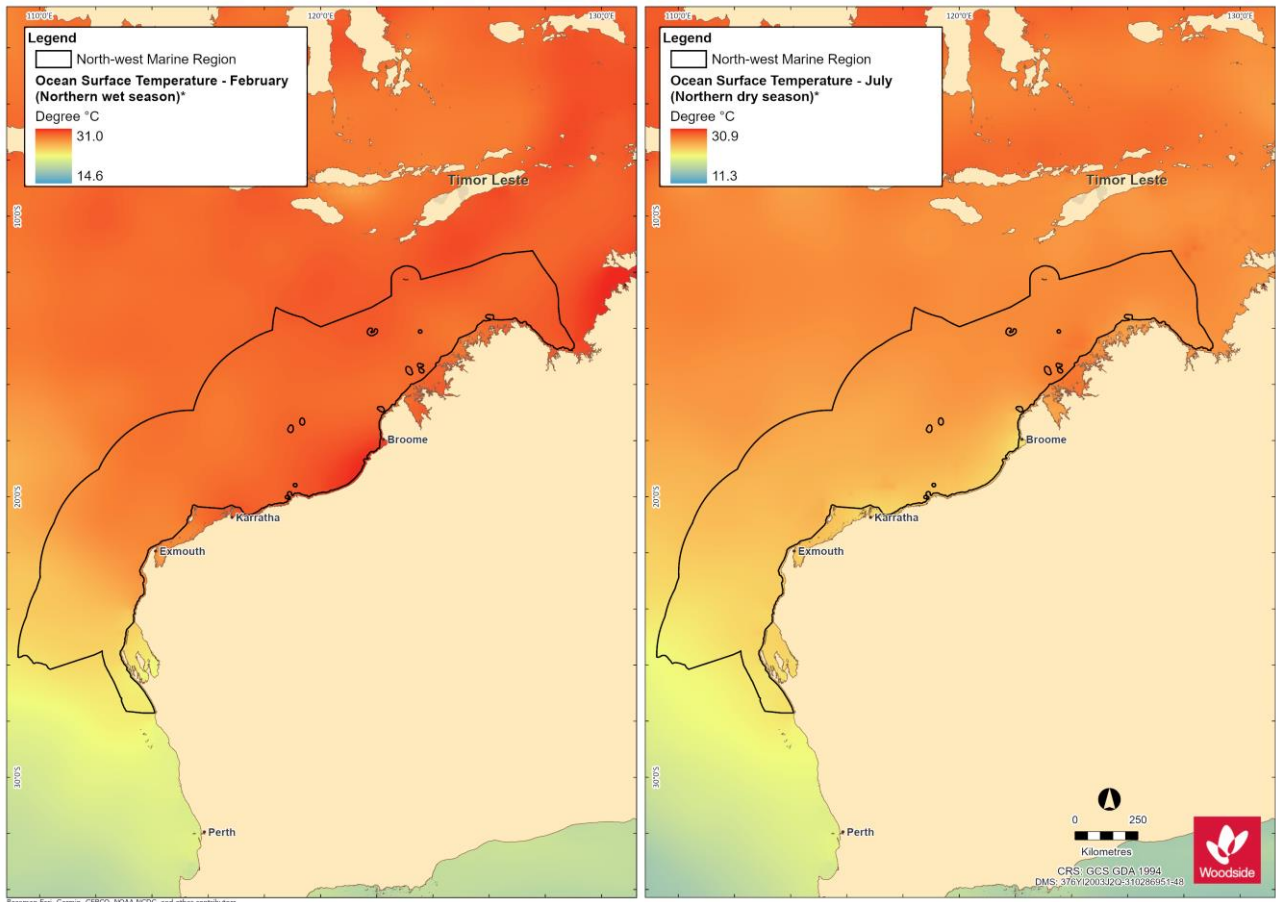


Figure 2-5. Ocean surface temperature for NWMR: (a) summer (February, northern wet season) and (b) winter (July, northern dry season)

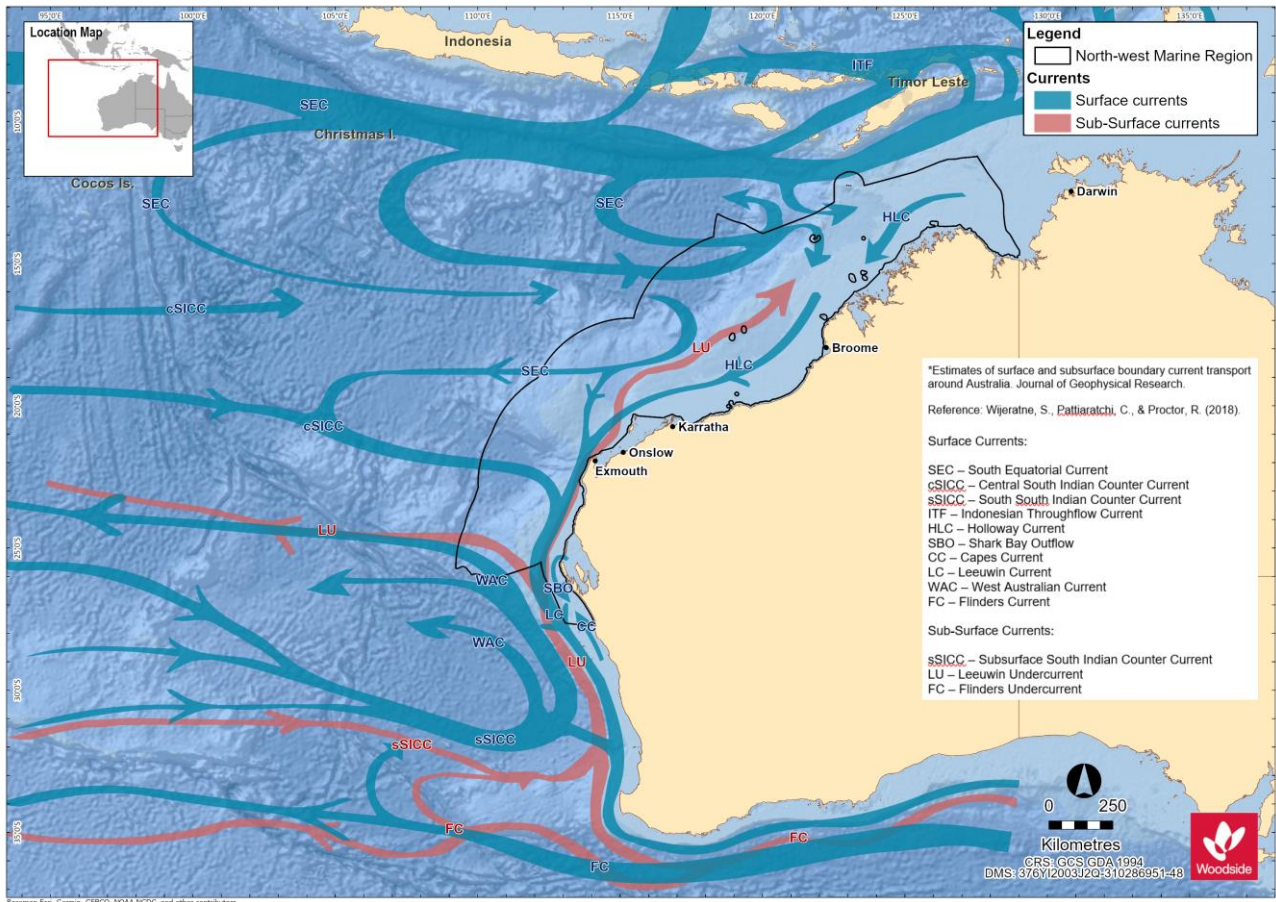


Figure 2-6. Ocean surface and sub-surface currents of the NWMR and wider region

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.

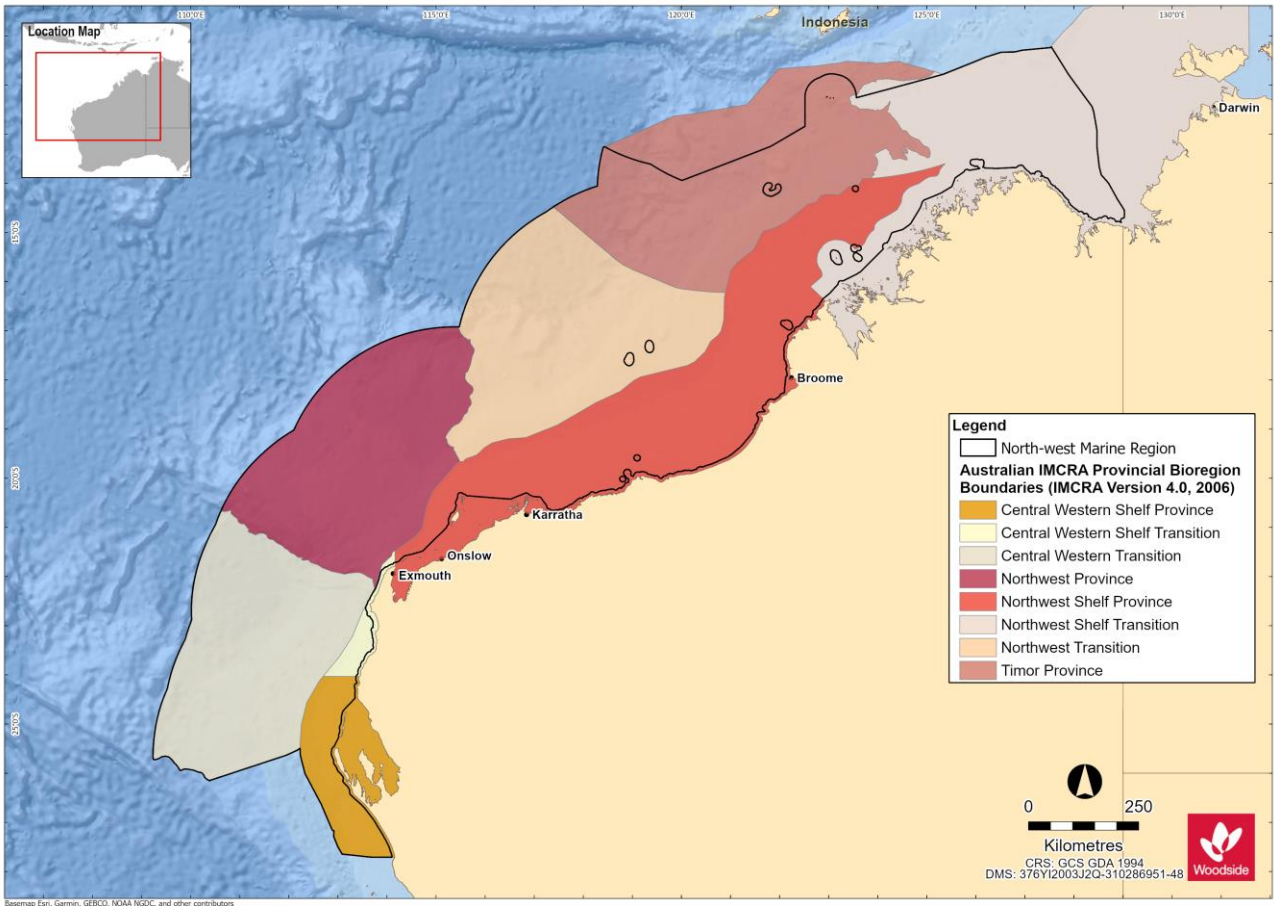


Figure 2-7. The eight provincial bioregions of the NWMR (Commonwealth of Australia, 2006)

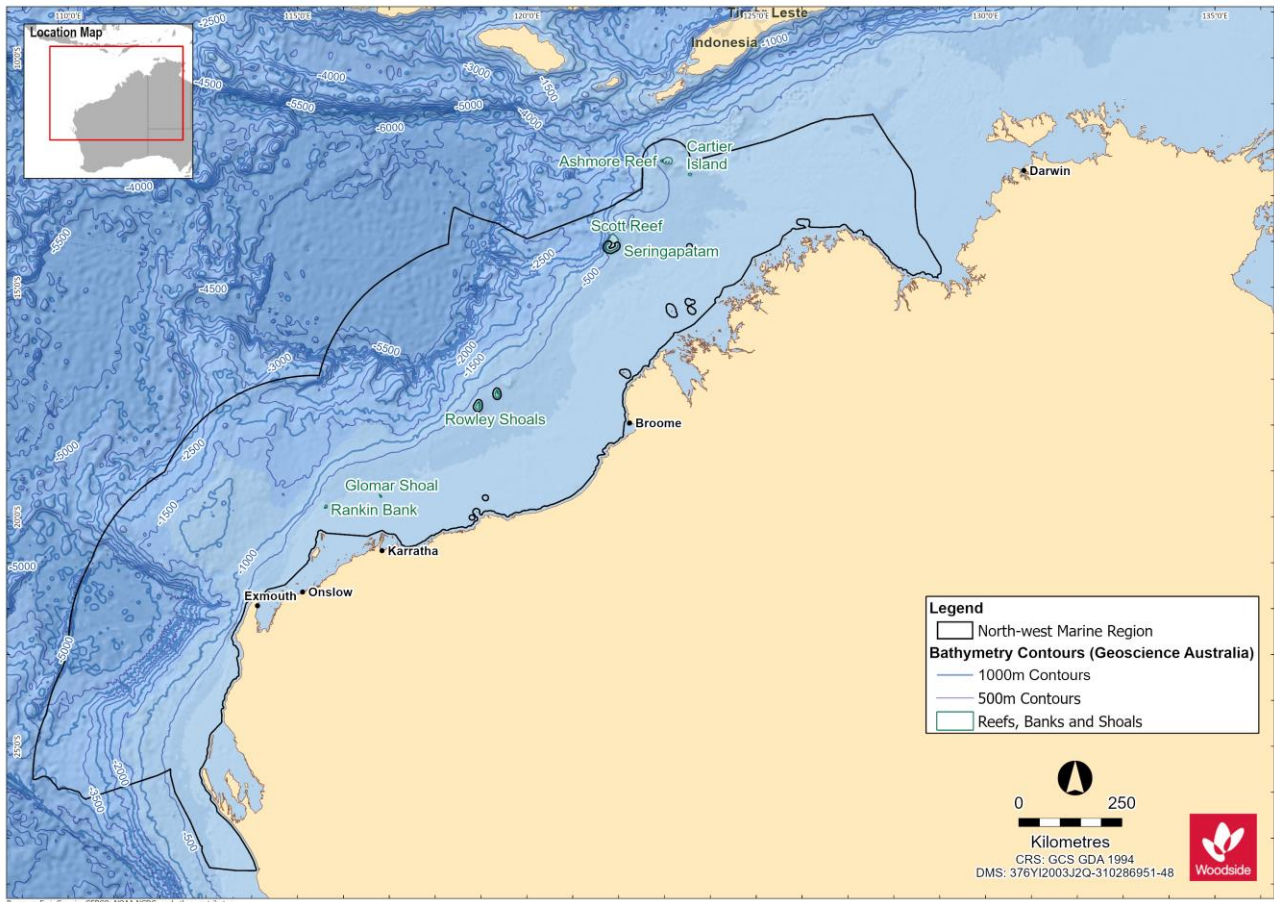


Figure 2-8. Bathymetry of the NWMR

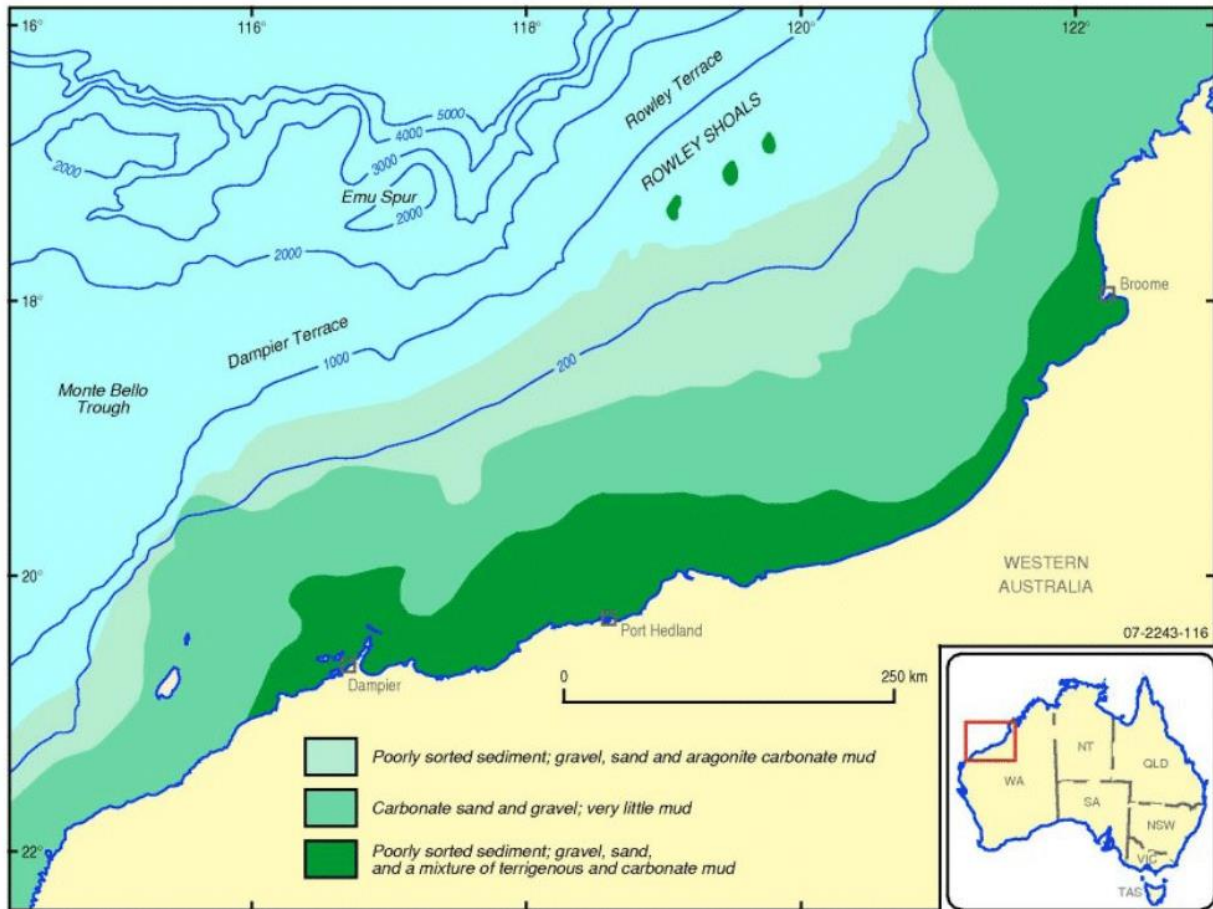


Figure 2-9. Overview of the seabed sediments of the NWMR (Baker *et al.*, 2008)

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

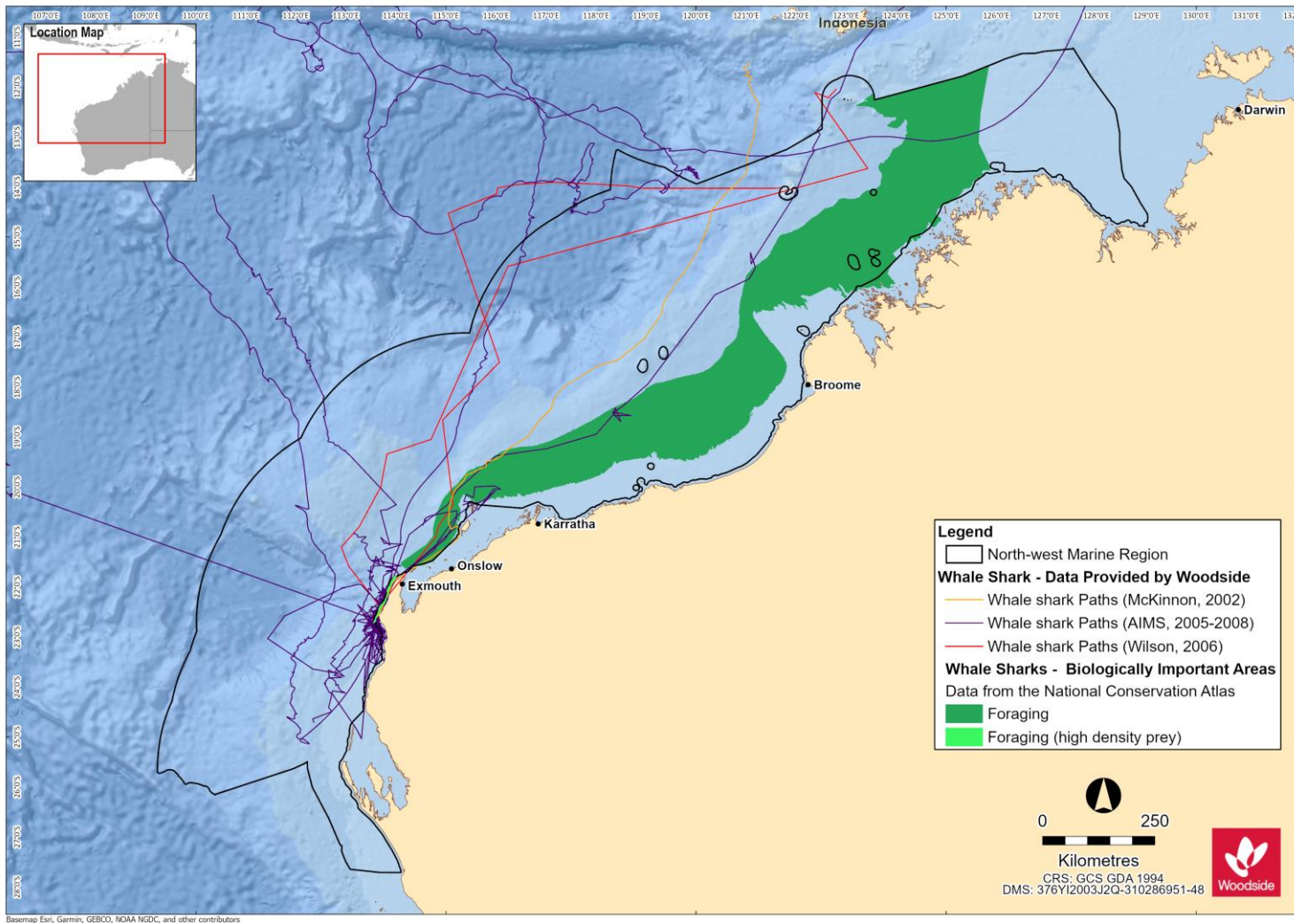


Figure 5-1 Whale shark BIAs for the NWMR and tagged whale shark tracks

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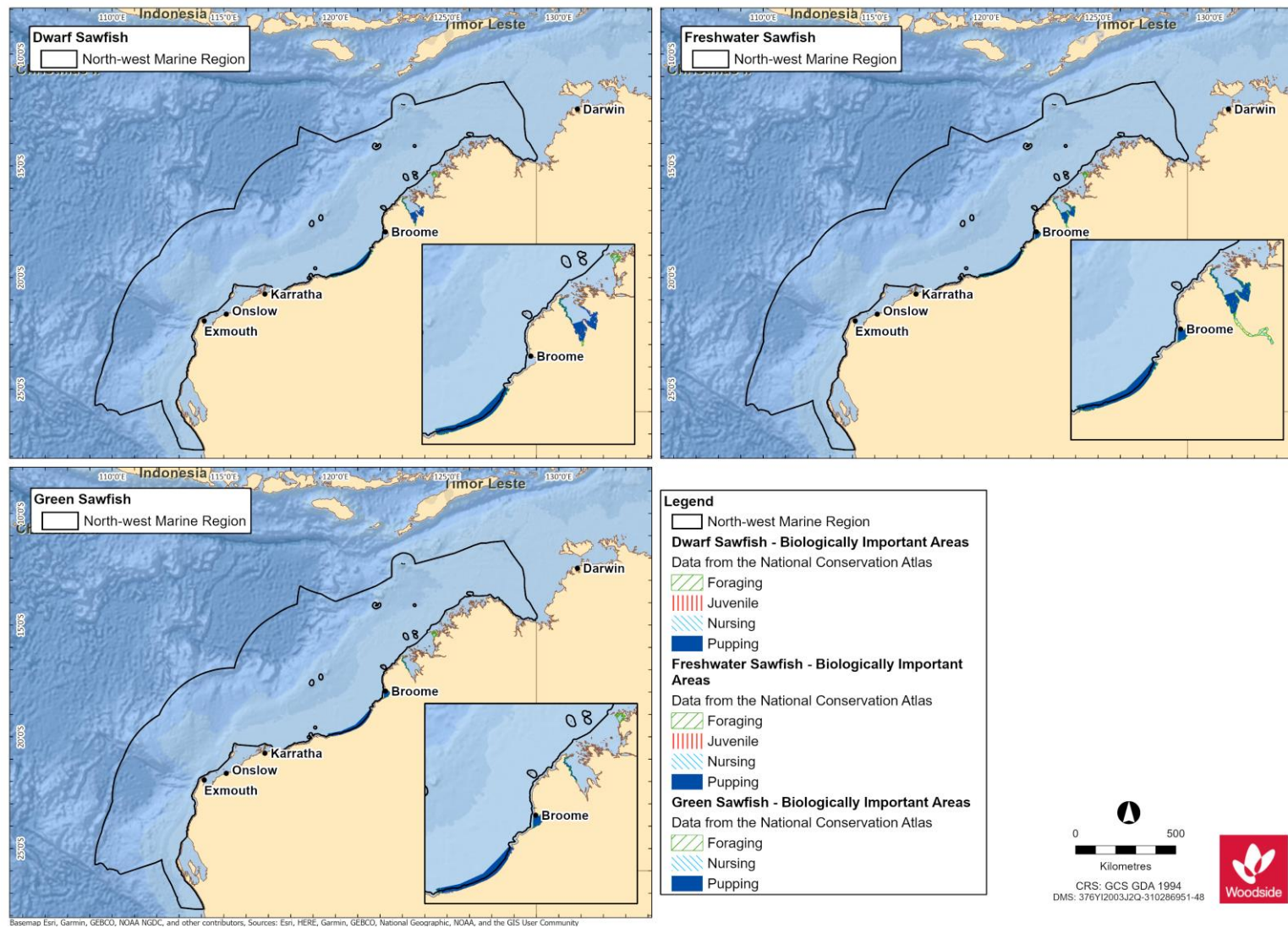


Figure 5-2 Sawfish BIAs for the NWMR

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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).

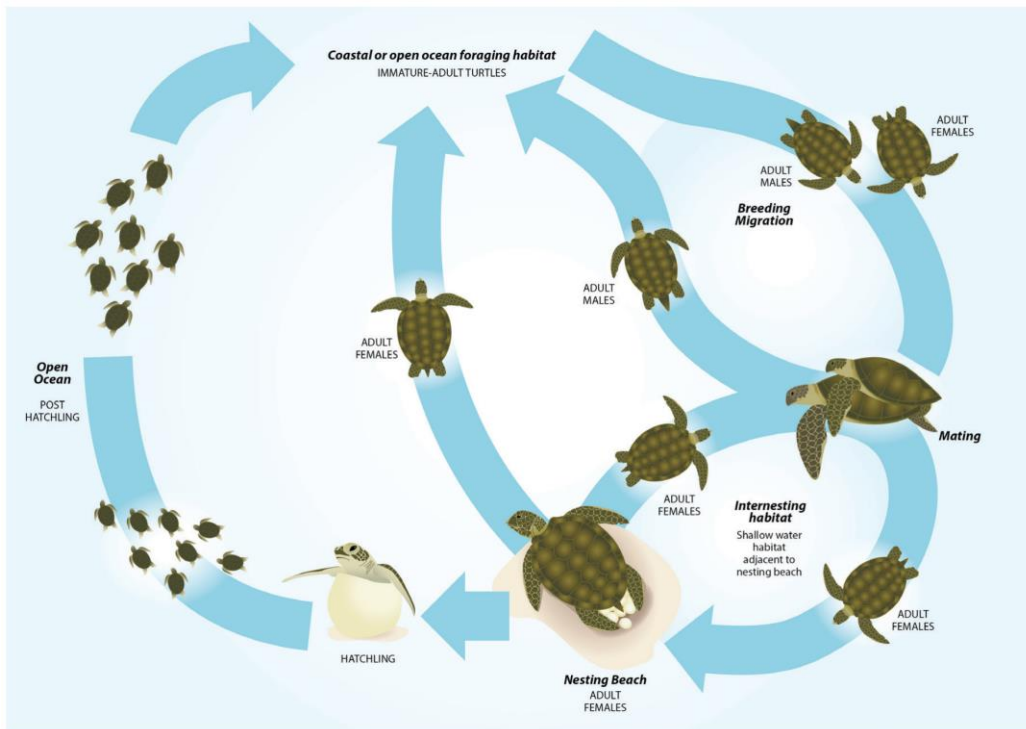


Figure 6-1 Generalised life cycle of marine turtles (Commonwealth of Australia, 2017)

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)

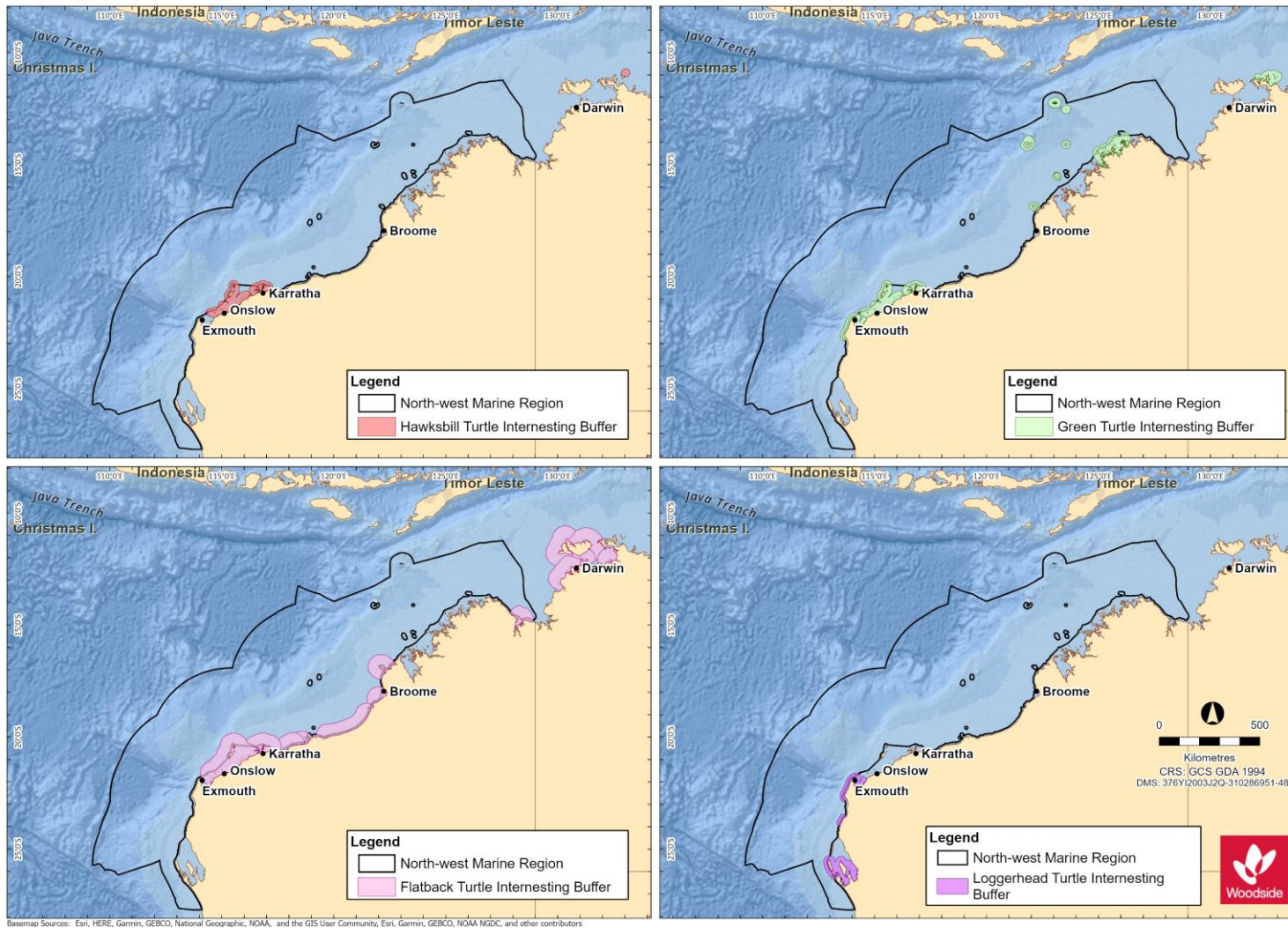


Figure 6-2 Marine turtle species habitat critical to survival (nesting beaches and interesting buffers) for the NWMR

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6.3 Marine Turtle Biological Important Areas in the NWMR

A review of the National Conservation Values Atlas (DAWE, 2020²) identified BIAs for the four marine turtle species that occur within the NWMR. These are described in **Table 6-3**. Note that nesting and interesting BIAs are not listed in **Table 6-3** as they are defined as in the Recovery Plan as habitat critical to survival for marine turtles nesting beaches and interesting areas (refer **Table 6-2**).

² <http://www.environment.gov.au/webgis-framework/apps/ncva/ncva.jsf>

Table 6-3 Marine turtle BIAs within the NWMR

Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
Green turtle	✓	✓	✓	No mating BIA identified within the NWMR.	Foraging inshore areas of Barrow Island Foraging at Montgomery Reef Foraging at Montebello Islands Foraging at Dixon Island Foraging around Ashmore Reef Foraging at Seringapatam Reef and Scott Reef Foraging in the De Grey River area to Bedout Island Foraging around the Islands between Cape Preston and Onslow and inshore of Barrow Island Foraging around Dampier Archipelago (islands to the west of the Burrup Peninsula) Foraging at Legendre Island and Huay Island Foraging around Delambre Island Foraging in the Joseph Bonaparte Gulf Foraging in waters adjacent to James Price Point	Green turtles can migrate more than 2600 km between their feeding and nesting grounds. Individual turtles foraging in the same area do not necessarily take the same migration route (Limpus <i>et al.</i> , 1992). Ferreira <i>et al.</i> (2021) broadly identified two migratory corridors, one used by the NWS stock-Pilbara and another used by the NWS stock-Kimberley and the Scott-Browse stock with some overlap at the northern and southern extents respectively. This study showed that the foraging distribution of green turtles from two stocks in WA expands throughout north-west and northern Australian coastal waters, including the NT and Queensland.
Hawksbill turtle	✓	✓	✓	No mating BIA identified within the NWMR.	Foraging around the Lowendal Island group Foraging at Delambre Island Foraging around Dixon Island Foraging in the De Grey River area to Bedout Island Foraging around the islands between Cape Preston and	Individuals may migrate up to 2400 km between their nesting and foraging grounds (DSEWPAC, 2012a).

³ Migration BIA does not exist for Marine Turtles – general information provided.

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Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
					Onslow and inshore of Barrow Island Foraging around the islands of the Dampier Archipelago (to the west of the Burrup Peninsula) Foraging at Ashmore Reef	
Flatback turtle	✓	✓	-	Lacepede Islands Mating at Montebello Islands Mating at Dampier Archipelago (islands to the west of the Burrup Peninsula) Mating at Barrow Island A year-round internesting buffer biologically important area (BIA) of 80 km is located north and north-west of the Montebello Islands, extending 20 km further than the habitat critical to survival. However, use level for this BIA has been defined as very low (Commonwealth of Australia, 2017) and the habitat critical to survival internesting buffer is the legally recognised area of protection under the EPBC Act <i>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance</i> . Refer to the Marine Bioregional Plan for the North-west Marine Region (DSEWPAC, 2012a) for locations of seasonal 80 km internesting buffer BIAs for flatback turtles	Foraging at the islands between Cape Preston and Onslow and inshore of Barrow Island. Foraging at Montebello Islands Foraging at Dampier Archipelago (islands to the west of the Burrup Peninsula) Foraging at Legendre Island and Huay Island Foraging at Delambre Island Foraging in the Joseph Bonaparte Depression Foraging in waters adjacent to James Price Point	There is evidence that some flatback turtles undertake long-distance migrations between breeding and feeding grounds (Limpus <i>et al.</i> , 1983). However, flatback turtles generally do not have a pelagic phase to their lifecycle. Instead, hatchlings grow to maturity in shallow coastal waters thought to be close to their natal beaches (DSEWPAC, 2012a).

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Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
Loggerhead turtle	✓	✓	-	No mating BIA identified within the NWMR	Foraging in the De Grey River area to Bedout Island Foraging on the Western Joseph Bonaparte Depression Foraging in the waters adjacent to James Price Point	Adult loggerhead turtles dispersing from Dirk Hartog Island beaches (near Shark Bay) have remained within WA waters from southern WA to the Kimberley. Turtles dispersing from the North-west Cape–Muiron Islands nesting area have ranged north as far as the Java Sea and the north-western Gulf of Carpentaria, and to south-west WA (DSEWPAC, 2012).
Olive ridley turtle	✓	✓	-	No mating BIA identified within the NWMR	Foraging in the Western Joseph Bonaparte Depression and Gulf Foraging in the Dampier Archipelago (islands to the west of the Burrup Peninsula)	Migration routes and distances between nesting beaches and foraging areas are not known for Australian olive ridley turtles.

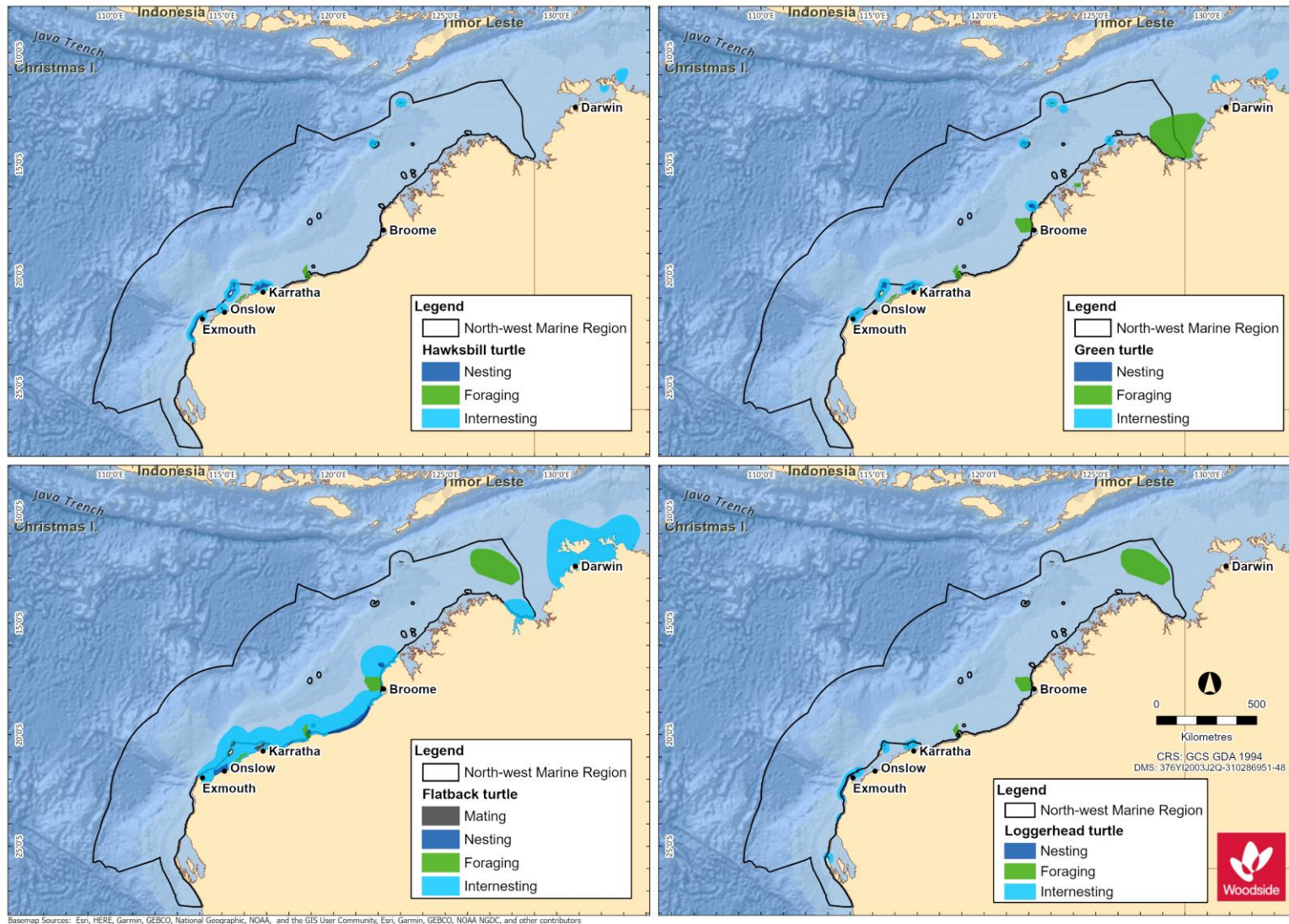


Figure 6-3 Marine turtle species BIA within the NWMR

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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)

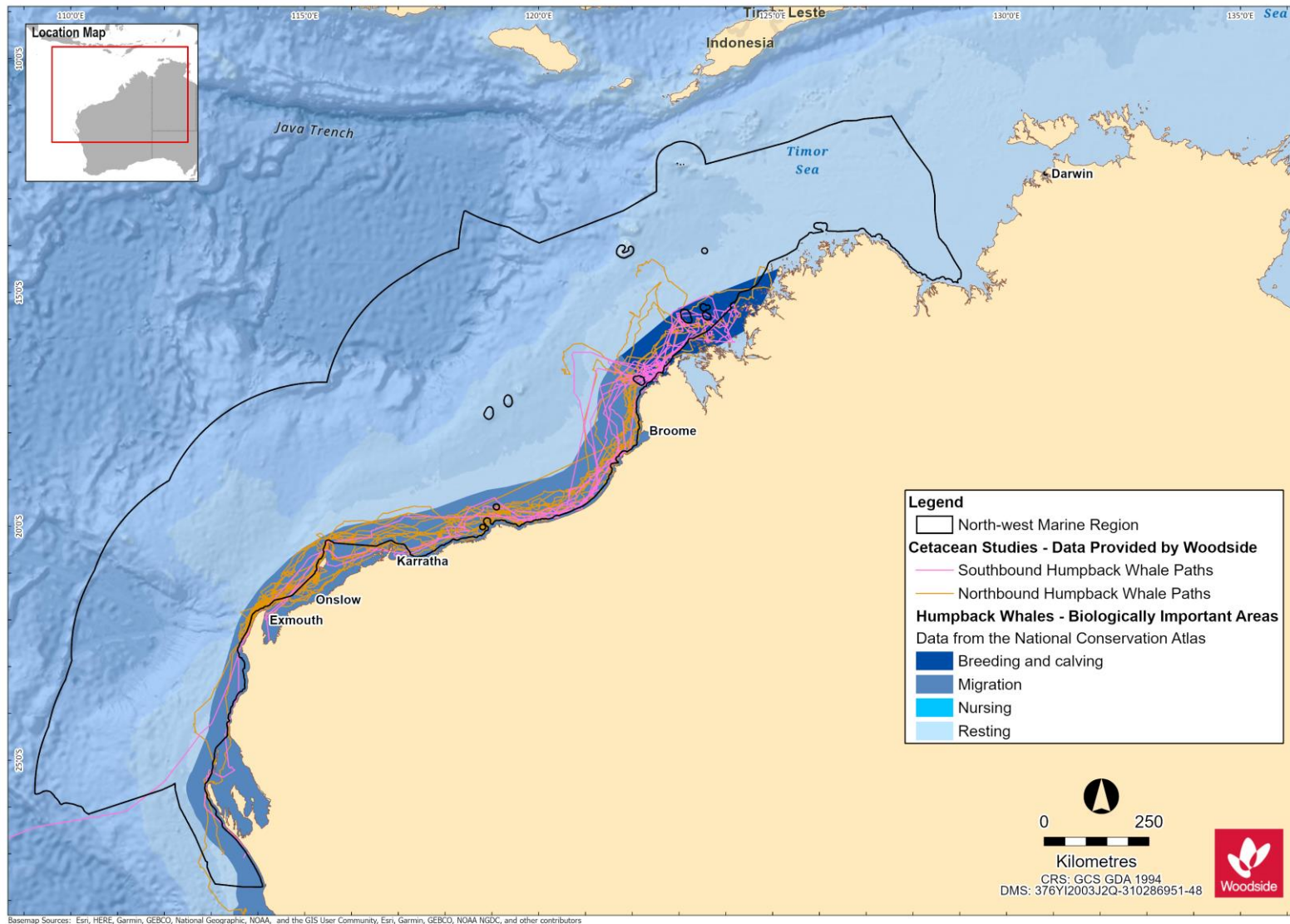


Figure 7-1 Humpback whale BIAs for the NWMR and tagged tracks for north and south bound migrations

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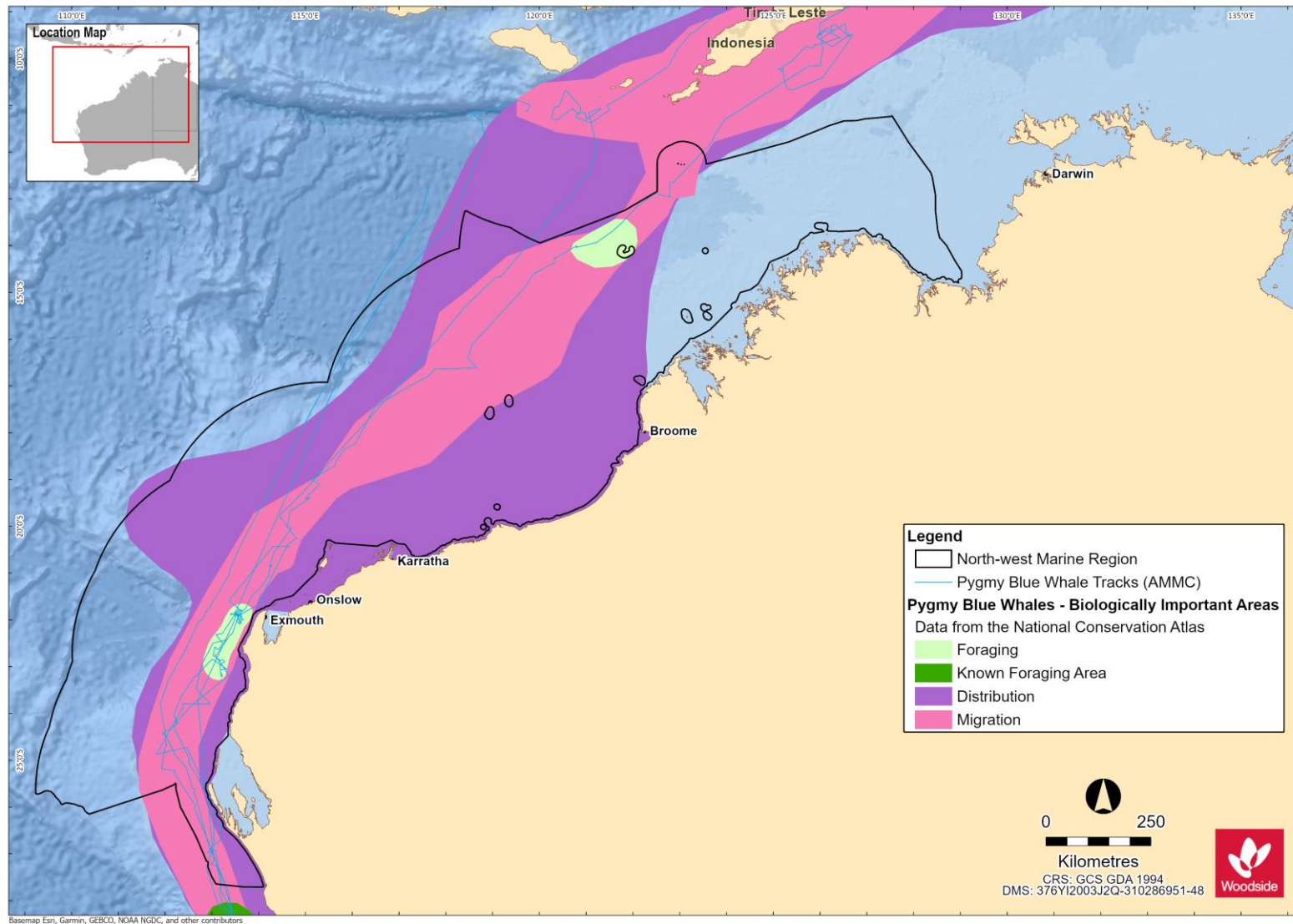


Figure 7-2 Pygmy blue whale BIAs for the NWMR and tagged whale tracks for northbound migration

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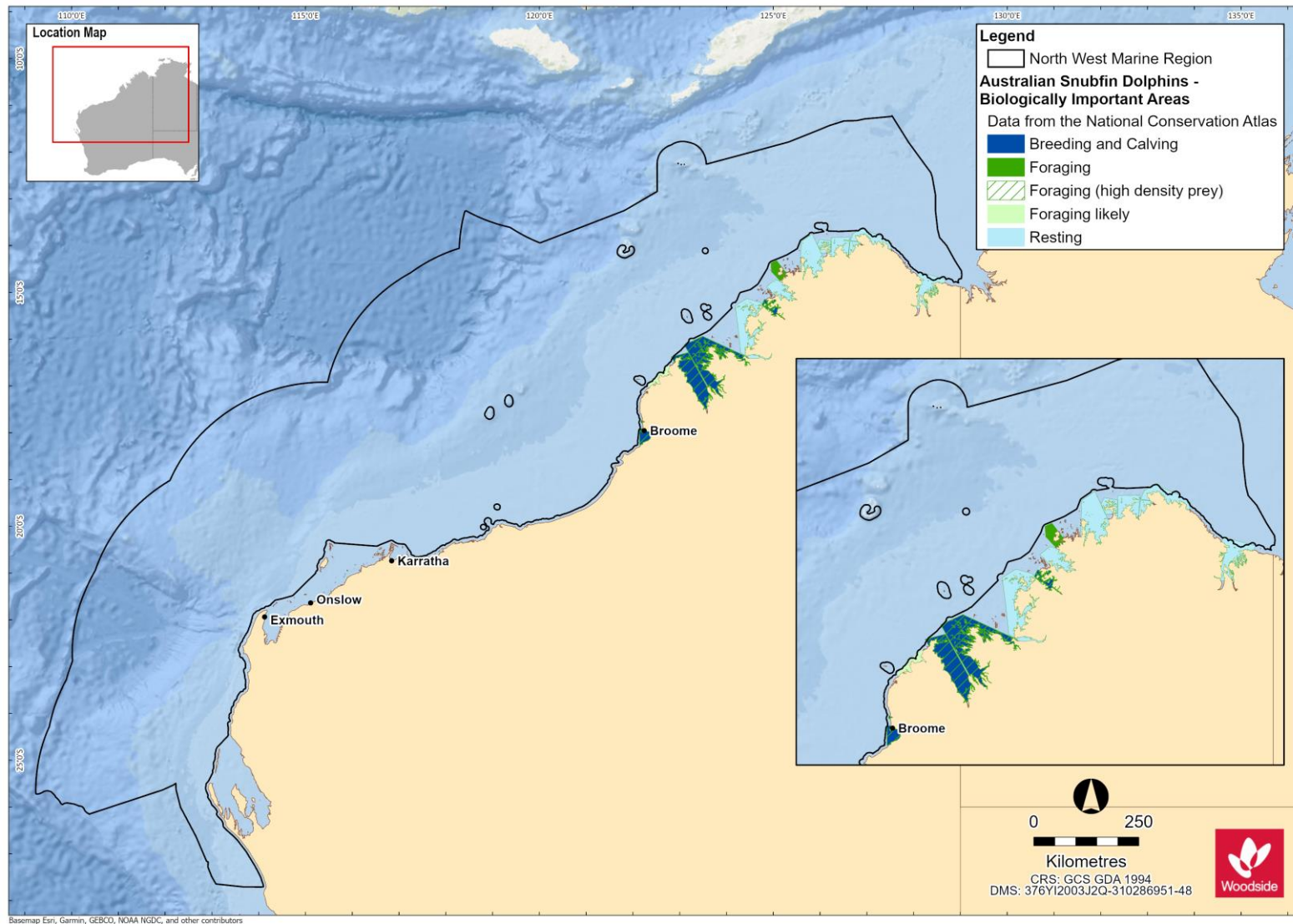


Figure 7-3 Australian snubfin dolphin BIAs for the NWMR

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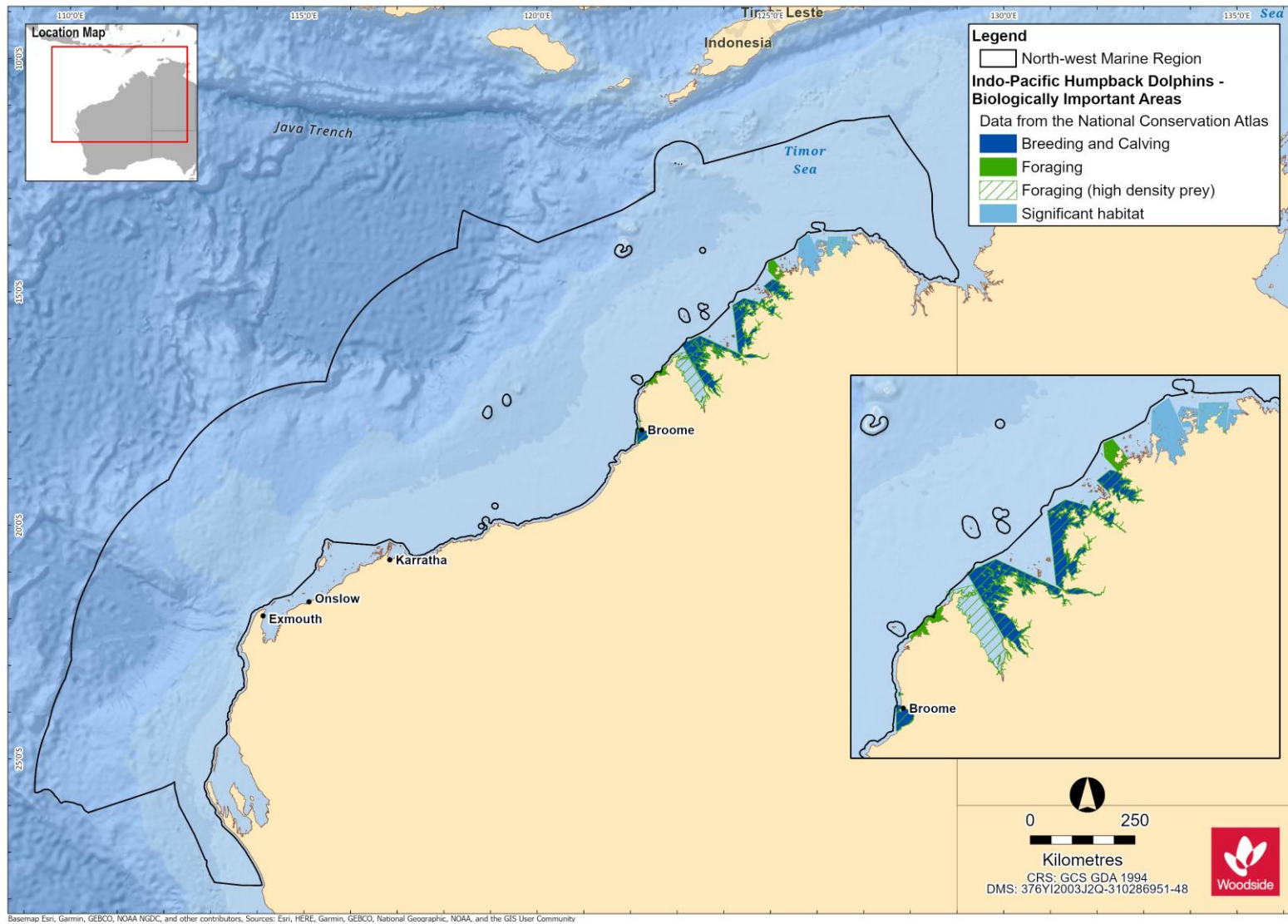


Figure 7-4 Indo-Pacific humpback dolphin BIAs for the NWMR

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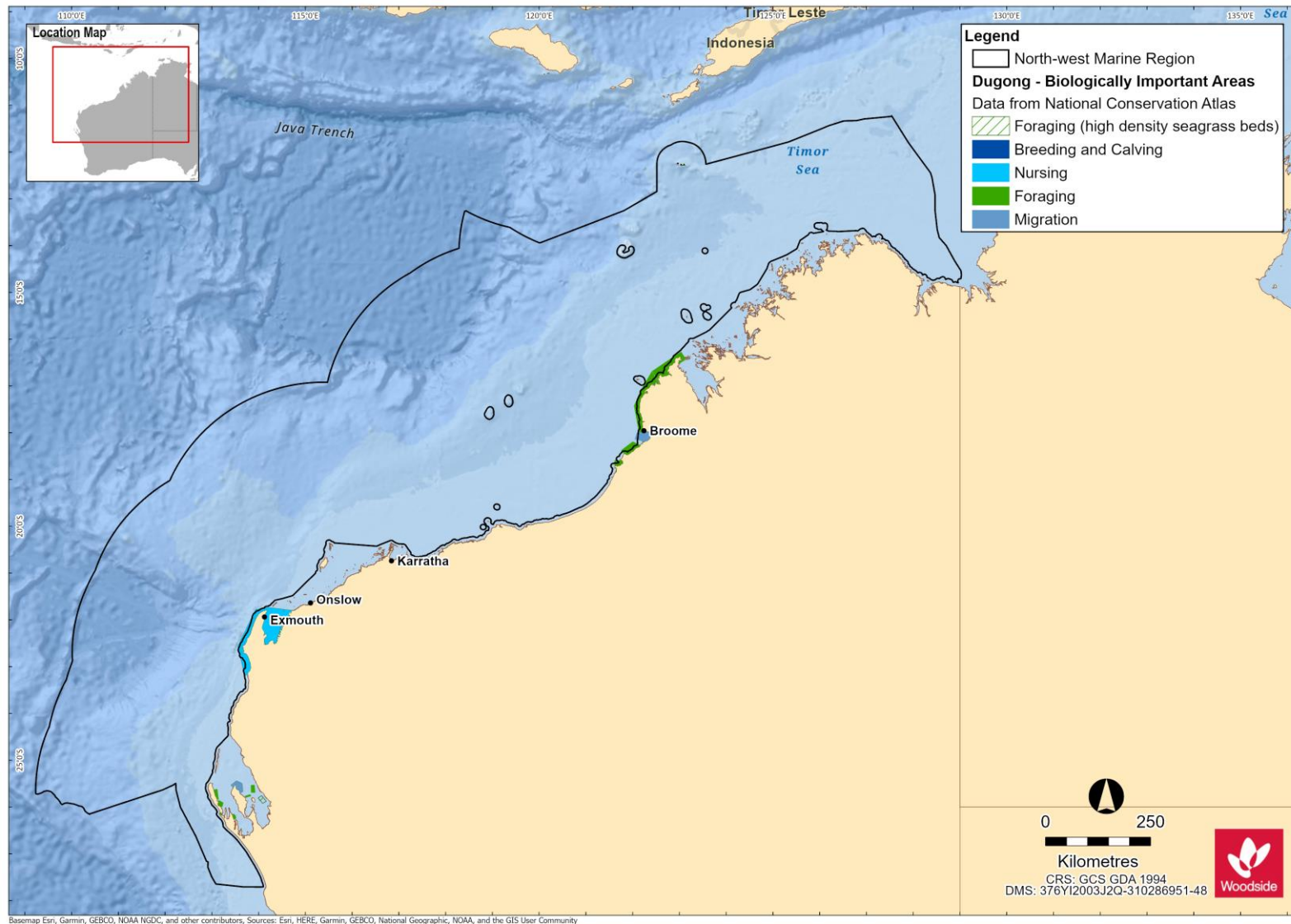


Figure 7-5 Dugong BIAs for the NWMR

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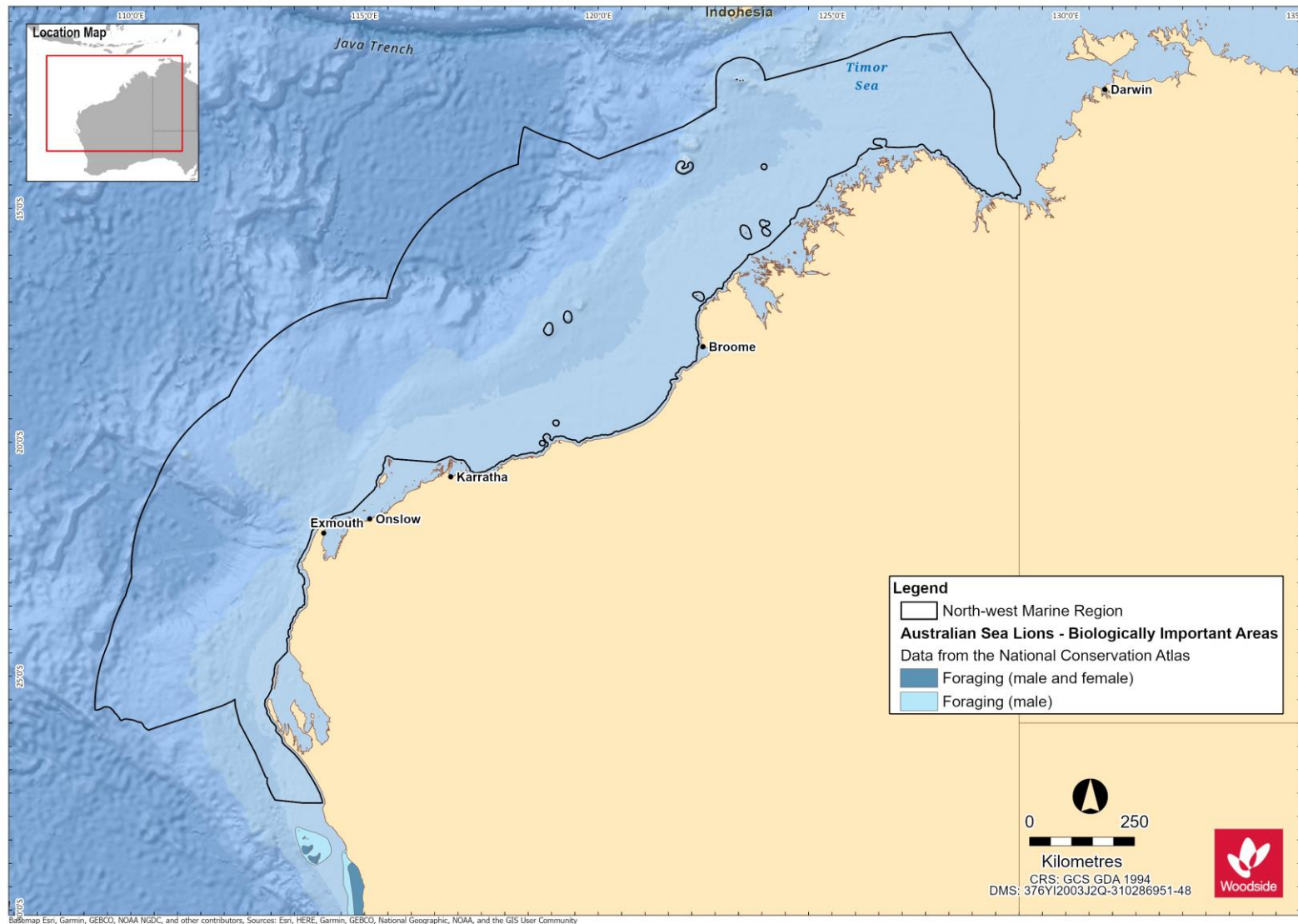


Figure 7-6 Australian sea lion BIAs in the northern extent of the SWMR closest to the NWMR

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7.6 Marine Mammal Summary for the NWMR

7.6.1 Browse

The Browse activity area includes biologically important habitat for five threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (breeding, calving and migration areas);
- Indo-Pacific humpback dolphin (foraging, breeding and calving areas);
- Australian snubfin dolphin (foraging, breeding and calving areas); and
- dugong (foraging).

BIAs for the marine mammal species are outlined in **Table 7-3**.

7.6.2 North-west Shelf / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for five threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (resting and migration areas);
- Indo-Pacific humpback dolphin (foraging, breeding and calving areas);
- Australian snubfin dolphin (foraging, breeding and calving areas); and
- dugong (foraging and calving areas).

BIAs for the marine mammal species are outlined in **Table 7-3**.

7.6.3 North-west Cape

The North-west Cape activity area includes biologically important habitat for three threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (resting and migration areas); and
- dugong (foraging and calving areas).

BIAs for the marine mammal species are outlined in **Table 7-3**.

8. SEABIRDS AND MIGRATORY SHOREBIRDS OF THE NWMR

8.1 Regional Context

The NWMR supports high numbers and species diversity of seabirds and migratory shorebirds including many that are EPBC Act listed, threatened and migratory. The NWMR marine bioregional plan reported 34 seabird species (listed as threatened, migratory and/or marine) that are known to occur, and 30 of 37 species of migratory shorebird species that regularly occur in Australia, are recorded at Ashmore Reef in the NWMR (DSEWPAC, 2012e). The NWMR marine bioregional plan also noted that Roebuck Bay and Eighty Mile Beach are internationally significant and recognised migratory shorebird locations.

Many migratory seabirds and shorebirds are protected through bilateral agreements between Australia and Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA), recognising the migratory route and important stopover and resting habitats of the East Asian-Australasian Flyway (EAAF). Important migratory bird habitats are also recognised as part of protected wetlands of the international significance under the Ramsar Convention. Important Bird Areas (IBAs) for the NWMR, which are also recognised as global Key Biodiversity Areas (KBAs) (BirdLife Australia⁴), include:

- Roebuck Bay KBA (and Ramsar site): Internationally significant migratory shorebird species.
- Mandora Marsh and Anna Plains KBA (adjacent to Eighty Mile Beach, Ramsar site): Internationally significant migratory shorebird species.
- Dampier Saltworks KBA: Internationally significant migratory shorebird species.
- Montebello Islands KBA: Shorebird and seabird species.
- Barrow Island KBA: Shorebird and seabird species.
- Exmouth Gulf Mangroves KBA: Internationally significant migratory shorebird species.

Table 8-1 presents a list of the threatened and migratory seabird and shorebird species that occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice.

4

[https://www.birdlife.org.au/projects/KBA#:~:text=The%20Key%20Biodiversity%20Areas%20\(KBAs,of%20advocacy%20for%20protected%20areas.](https://www.birdlife.org.au/projects/KBA#:~:text=The%20Key%20Biodiversity%20Areas%20(KBAs,of%20advocacy%20for%20protected%20areas.)

Accessed April, 2021.

Table 8-1. Bird species (threatened/migratory) identified by the EPBC Act PMST and other sources of information as potentially occurring within the NWMR

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
Seabirds						
<i>Macronectes giganteus</i>	Southern giant petrel	Endangered	Migratory	Marine	Migratory	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPAC, 2011c)
<i>Papasula abbotti</i>	Abbott's booby	Endangered	N/A	Marine	N/A	Conservation Advice for the Abbott's booby - <i>Papasula abbotti</i> (Threatened Species Scientific Committee, 2020b)
<i>Pterodroma mollis</i>	Soft-plumaged petrel	Vulnerable	N/A	Marine	N/A	Conservation Advice <i>Pterodroma mollis</i> soft-plumaged petrel (Threatened Species Scientific Committee, 2015f)
<i>Sternula nereis nereis</i>	Australian fairy tern	Vulnerable	N/A	N/A	Vulnerable	Conservation Advice for <i>Sternula nereis nereis</i> (Fairy Tern) (DSEWPAC, 2011d)
<i>Anous tenuirostris melanops</i>	Australian lesser noddy	Vulnerable	N/A	Marine	Endangered	Conservation Advice <i>Anous tenuirostris melanops</i> Australian lesser noddy (Threatened Species Scientific Committee, 2015e)
<i>Thalassarche carteri</i>	Indian yellow-nosed albatross	Vulnerable	Migratory	Marine	Endangered	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPAC, 2011c)
<i>Anous stolidus</i>	Common noddy	N/A	Migratory	Marine	Migratory	Draft Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2019)
<i>Fregata ariel</i>	Lesser frigatebird	N/A	Migratory	Marine	Migratory	
<i>Fregata minor</i>	Great frigatebird	N/A	Migratory	Marine	Migratory	
<i>Sula leucogaster</i>	Brown booby	N/A	Migratory	Marine	Migratory	
<i>Sula sula</i>	Red-footed booby	N/A	Migratory	Marine	Migratory	

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Onychoprion anaethetus</i> (listed as <i>Sterna anaethetus</i>)	Bridled tern	N/A	Migratory	Marine	Migratory	
<i>Thalasseus bergii</i>	Greater crested tern	N/A	Migratory	Marine	Migratory	
<i>Sternula albifrons</i>	Little tern	N/A	Migratory	Marine	Migratory	
<i>Sterna dougallii</i>	Roseate tern	N/A	Migratory	Marine	Migratory	
<i>Onychoprion fuscata</i>	Sooty tern	N/A	N/A	Marine	N/A	
<i>Hydroprogne caspia</i>	Caspian tern	N/A	Migratory	Marine	Migratory	
<i>Ardenna pacifica</i>	Wedge-tailed shearwater	N/A	Migratory	Marine	Migratory	
<i>Puffinus assimillis</i>	Little shearwater	N/A	N/A	Marine	N/A	
<i>Ardenna carneipes</i>	Flesh-footed shearwater	N/A	Migratory	Marine	Vulnerable	
<i>Calonectris leucomelas</i>	Streaked shearwater	N/A	Migratory	Marine	Migratory	
<i>Phaethon lepturus</i>	White-tailed tropicbird	N/A	Migratory	Marine	Migratory	
<i>Chroicocephalus novaehollandiae</i>	Silver gull	N/A	N/A	Marine	N/A	
Migratory shorebirds						
<i>Numenius madagascariensis</i>	Eastern curlew, Far Eastern curlew	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Numenius madagascariensis</i> eastern curlew (DOE, 2015a)
<i>Calidris ferruginea</i>	Curlew sandpiper	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Calidris ferruginea</i> curlew sandpiper (DOE, 2015b)
<i>Calidris tenuirostris</i>	Great knot	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Calidris tenuirostris</i> Great knot (Threatened Species Scientific Committee, 2016a)
<i>Limosa lapponica menzbieri</i>	Bar-tailed godwit (<i>menzbieri</i>)	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Limosa lapponica menzbieri</i> Bar-tailed godwit (northern Siberia). (Threatened Species Scientific Committee, 2016c)

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Calidris canutus</i>	Red knot	Endangered	Migratory	Marine	Endangered	Conservation Advice <i>Calidris canutus</i> Red knot (Threatened Species Scientific Committee, 2016b)
<i>Charadrius mongolus</i>	Lesser sand plover	Endangered	Migratory	Marine	Endangered	Conservation Advice <i>Charadrius mongolus</i> Lesser sand plover (Threatened Species Scientific Committee, 2016e)
<i>Charadrius leschenaultii</i>	Greater sand plover	Vulnerable	Migratory	Marine	Vulnerable	Conservation Advice <i>Charadrius leschenaultia</i> Greater sand plover (Threatened Species Scientific Committee, 2016d)
All migratory shorebird species	Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015c).					

8.2 Seabirds in the NWMR

Seabirds are birds that are adapted to life within the marine environment (oceanic and coastal) and are generally long-lived, have delayed breeding and have fewer young than other bird species (Commonwealth of Australia, 2019). At least 34 seabird species listed as threatened, migratory and/or marine under the EPBC Act are known to occur regularly in the NWMR and include a variety of species of terns, noddies, petrels, shearwaters, frigatebirds, and boobies. Many of these species spend most of their lives at sea (predominately pelagic species), ranging over large distances to forage. These pelagic species only come onshore to breed and raise chicks at natal or high-fidelity breeding colonies on remote, offshore island locations in and adjacent to the NWMR. Many species are ecologically significant to the NWMR, as they are endemic to the region, can be present in large numbers in breeding seasons and non-breeding seasons, and many exhibit extensive annual migrations that include marine areas outside the Australian EEZ (DSEWPAC, 2012e).

The presence of seabirds within the NWMR is influenced by seabird species that migrate and forage in the area during the non-breeding season and this includes many seabird species that breed on the Houtman Abrolhos in the SWMR. Pelagic seabirds have been documented foraging at current boundaries and seasonal upwellings within the NWMR (refer to Sutton *et al.*, 2019). The Houtman Abrolhos Islands National Park located in the SWMR, is one of the most significant seabird breeding locations in the eastern Indian Ocean. Sixteen (16) species of seabirds breed there. Eighty percent of common (brown) noddies, 40% of sooty terns and all the lesser noddies found in Australia nest at the Houtman Abrolhos (Surman, 2019). Important seabird areas in the NWMR are as identified by the KBAs (refer to **Section 8.1**) and the information on a select number of seabird species documented for the NWMR (based on the screening criteria presented in **Section 3**), as presented in **Table 8-2**.

Table 8-2 Information on threatened/migratory seabird species of the NWMR

Species	Key Information
Seabirds	
Southern giant petrel	This species is included in the National recovery plan for threatened albatrosses and giant petrels. Habitat critical to survival is defined for breeding and foraging. There are six known breeding localities under Australian jurisdiction (for all species giant petrels) and all are located in the Southern Ocean including islands off Tasmania and within the Australian Antarctic Territory (DSEWPAC, 2011c). Habitat critical to survival identified for foraging is defined as waters south of 25 degrees latitude. The giant petrel species distribution is mainly within the Southern Ocean but this species does migrate into subtropical waters during the winter and its distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Abbott's booby	The Abbott's booby is a large, long-lived seabird known to nest only at Christmas Island. The recovery of this species is strongly dependent on the protection of breeding habitat defined habitat critical to the survival of this species on Christmas Island (Threatened Species Scientific Committee, 2020b). This species spends much of its time at sea and known to forage over large distances offshore when nesting and its range includes off the coast of Java, near the Chagos and in the Banda Sea, and may possibly extend into the north-western extent of the NWMR. No BIAs for this species are located in the NWMR.
Soft-plumaged petrel	This petrel species breeds only at two locations in Australian waters within the Southern Ocean (one off Tasmania and Macquarie Island) (Threatened Species Scientific Committee, 2015f). As a mainly sub-Antarctic species they are usually distributed in cooler seas but distribution extends into subtropical waters and its known distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Australian fairy tern	The Australian fairy tern is listed as Vulnerable for the sub-species only recorded for WA. It has a coastal distribution from Sydney, south to Tasmania and around southern WA up to the Dampier Archipelago and out on the offshore island groups of Barrow, Montebello and the Lowendals (DSEWPAC, 2011d). The Australian fairy tern feeds on small baitfish and roosts and nests on sandy beaches below vegetation. These behaviours, generally, occur in inshore waters of island archipelagos and on the Australian mainland shores and adjacent wetlands. Fairy terns breed from August to February. The Australian fairy tern is unlikely to be present
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Species	Key Information
	within the offshore environment of the NWMR. The largest breeding colony in Western Australia for this species is in the Houtman Abrolhos Islands, SWMR (Surman, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Australian lesser noddy	The Houtman Abrolhos, WA is an important breeding habitat for the Australian lesser noddy in the eastern Indian Ocean. This species exhibits nesting habitat specialisation (white mangrove stands) and has a limited foraging range during the breeding season. Furthermore, the lesser noddy forages over shelf waters and appears not to disperse over their non-breeding period as they remain largely in the general vicinity or slightly to the south of the colony in the non-breeding season (February to September; Surman <i>et al.</i> , 2018). No BIAs for this species are located in the NWMR.
Indian yellow-nosed albatross	This species is included in the National recovery plan for threatened albatrosses and giant petrels. Habitat critical to survival is defined for breeding and foraging. There are six known breeding localities under Australian jurisdiction (for all species of albatrosses) and all are located in the Southern Ocean including islands off Tasmania and within the Australian Antarctic Territory (DSEWPAC, 2011c). Habitat critical to survival identified for foraging is defined as waters south of 25 degrees latitude. All albatross species distribution (including the Indian yellow-nose albatross) is mainly within the Southern Ocean but this species does migrate into subtropical waters during the winter and its distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Common noddy	This species is listed as migratory and marine. The common (or brown) noddy is the largest species of noddy found in Australian waters. The species is widespread in tropical and subtropical areas beyond Australia. This seabird species is gregarious and normally occurs in flocks, up to hundreds of individuals, when feeding or roosting. The Houtman Abrolhos, WA is the primary breeding habitat for the common noddy in the Eastern Indian Ocean. This species spends their non-breeding season (March to August) in the NWS area, around 950 km north from the breeding colony (Surman <i>et al.</i> 2018). The species occurs within NWMR waters, particularly around offshore islands such as the Montebello Island group. This species is recorded on unmanned oil and gas platforms within the NWS. No BIAs for this species are located in the NWMR.
Lesser frigatebird Great frigatebird	Both species of frigatebird are listed as migratory and marine. Within the NWMR, the lesser frigatebird is known to breed on Adele, Bedout and West Lacepede islands, Ashmore Reef and Cartier Island (Commonwealth of Australia, 2019). The lesser frigatebird feeds mostly on fish and sometimes cephalopods, and all food is taken while the bird is in flight. Lesser frigatebirds generally forage close to breeding colonies. Breeding/foraging BIAs for the lesser frigatebird are located in the NWMR; refer to Table 8-3 .
Brown booby	The brown booby is the most common booby, occurring throughout all tropical oceans bounded by latitudes 30° N and 30° S. There are large colonies on offshore islands within the NWMR such as the Lacepede Islands (one of the largest colonies in the world), Ashmore Reef, and other offshore Kimberley islands. This seabird species is a specialised plunge diver, mostly eating fish and some cephalopods (Commonwealth of Australia, 2019). Breeding/foraging BIAs for the brown booby are located in the NWMR; refer to Table 8-3 and Figure 8-3 .
Red-footed booby	Within the NWMR, its known breeding sites for this species include Ashmore Reef and Cartier Island. It is a pelagic species and generally occurs away from land. It mainly eats flying fish and squid. Prey abundance is reliant on the high productivity in slope areas off remote islands where the birds breed (Commonwealth of Australia, 2019). Breeding/foraging BIAs for the red-footed booby are located in the NWMR; refer to Table 8-3 and Figure 8-3 .
Greater crested tern	The greater crested tern has a widespread distribution recorded on islands and coastlines of tropical and subtropical areas, ranging from the Atlantic coast of South Africa, Indian Ocean and through south-east Asia and Australia. Outside the breeding season it can be found at sea throughout its range, with the exception of the central Indian Ocean (Commonwealth of Australia, 2019). The largest breeding colony in WA for this species is the Houtman Abrolhos Islands, SWMR (Surman, 2019). No BIAs for this species are located in the NWMR.
Little tern	There are three sub-populations of this species in Australia and two of these occur in the NWMR: northern Australian breeding sub-population occurring around Broome and extending across in to the NMR, and an east Asian breeding sub-population, with the terns present from Shark Bay to south-eastern Queensland during the austral summer. Little terns

Species	Key Information
	usually forage close to breeding colonies in the shallow water of estuaries (Commonwealth of Australia, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Roseate tern	This species is generally tropical in distribution and there are many breeding populations in the NWMR, including Ashmore Reef, Napier Broome Bay, Bonaparte Archipelago, Lacepede Islands, Dampier Archipelago and the Lowendal Islands. A large number of non-breeding roseate terns have been observed at several remote locations in the Kimberley and there are high numbers also recorded for Eighty Mile Beach Ramsar site. The Kimberley colonies are likely to be another sub-species that breeds in east Asia. Roseate terns predominately eat small pelagic fish (Commonwealth of Australia, 2019). The largest breeding colony in Western Australia for this species is in the Houtman Abrolhos Islands, SWMR (Surman, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Wedge-tailed shearwater	The wedge-tailed shearwater is a pelagic, marine seabird known from tropical and subtropical waters. Its distribution is widespread across the Indian and Pacific oceans. It is known to breed on the east and west coasts (and offshore islands) of Australia. This species is known to consume fish, cephalopods, and other biota primarily via contact-dipping. Wedge-tailed shearwaters are now understood to undertake extensive foraging trips (over thousands of kilometres over periods of days when chicking and provisioning young) and much longer and extensive pelagic travels over the north-west Indian Ocean during the non-breeding season, targeting current boundaries and upwellings. The species breeds throughout its range, mainly on vegetated islands, atolls and cays and excavates burrows in the ground where chicks are raised (Commonwealth of Australia, 2019). Large breeding colonies of the wedge-tailed shearwater are located on the Houtman Abrolhos islands (SWMR) (Surman <i>et al.</i> , 2018) and several locations in the NWMR including: Muiron Islands (North-west Cape), Varanus Island and the Dampier Archipelago in the Pilbara where burrow numbers were estimated to several hundred thousand to half a million such as on the Muiron Islands, though it is not known if all burrows are utilised on an annual basis (Birdlife Australia, 2018; Surman <i>et al.</i> , 2018). Cannell <i>et al.</i> (2019) satellite tracked adult wedge-tailed shearwaters during egg incubation and chick rearing on the Muiron Islands in January 2018. For the incubation trips, there was a strong consistency for the birds to travel towards seamounts, typically located north-west of the Muiron Islands, between Australia and Indonesia. One bird however remained south-west of the islands, in the Cape Range Canyon. A similar pattern to utilise areas associated with sea mounts was also observed for the long foraging trips during chick rearing, though some of the foraging was concentrated in deeper waters. A bimodal foraging strategy during chick-rearing was observed, with adults undertaking long foraging trips after a series of shorter foraging trips within the NWMR. Surman <i>et al.</i> (2018) reported most wedge-tailed shearwaters from the breeding colonies on the Houtman Abrolhos undertook extensive non-breeding migrations. This seabird species occupied waters adjacent or to the north of their nesting sites or migrated 4200 km north-west into the equatorial central Indian Ocean near the Ninety East Ridge during the non-breeding season (later April to mid-November). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-1 .
Flesh-footed shearwater	The species mainly occurs in the subtropics, over continental shelves and slopes and occasionally inshore waters, with individual birds pass through the tropics and over deeper waters during migration to the North Pacific and Indian oceans (Commonwealth of Australia, 2019). They are a common visitor to the waters off southern Australia, from south-western WA to south-eastern Queensland. The fleshy-footed shearwater is a trans-equatorial migrant, breeding from late September to May off south-western Australia, and migrating north by early May, across the southern Indian and possibly Indonesia to the northern Pacific Ocean. No BIAs for the flesh-footed shearwater are located in the NWMR.
Streaked shearwater	The streaked shearwater has a broad distribution in the western Pacific Ocean, breeding on the coast and offshore islands of Japan, Russia, China and the Korean Peninsula. During winter months (non-breeding season), the species undertakes trans-equatorial migration to the coasts of Vietnam, New Guinea, the Philippines, Australia, southern India and Sri Lanka. The streaked shearwater feeds mainly on fish and squid that it catches by surface-seizing and shallow plunges (Commonwealth of Australia, 2019). No BIAs for the streaked shearwater are located in the NWMR.
White-tailed tropicbird	Tropicbirds are predominately pelagic species and the white-tailed tropicbird forages in warm waters and over long distances (pan-tropical). The species is most common off north-west Australia. In the NWMR, this species is considered a sub-species and are limited in number and distribution. Nesting sites are known for Clerke Reef (Rowley Shoals) and Ashmore

Species	Key Information
	Reef. Christmas Island is also a known nesting site and the species can disperse several thousand kilometres during foraging trips. This species feeds mainly on fish and cephalopods, captured by deep plunge diving (Commonwealth of Australia, 2019). There are breeding BIAs at the Rowley Shoals and Ashmore Reef within the NWMR for the white-tailed tropicbird; refer to Table 8-3 .
Silver gull	The silver gull is typically described as an inshore and coastal foraging seabird and has an Australian-wide distribution including locations within the NWMR. It is noted as it has been recorded on unmanned oil and gas platforms located within the NWS.

8.2.1 Biologically Important Areas in the NWMR

BIAs representing important life cycle stages and behaviours for eight species of seabird in the NWMR are presented in **Table 8-3**.

Table 8-3 Seabird BIAs within the NWMR

Seabird Species	Woodside Activity Area			BIAs			
	Browse	NWS/S	NWC	Breeding/foraging	Foraging	Breeding	Resting
Australia fairy tern	-	✓	✓	-	No foraging BIAs in the NWMR Foraging in high numbers: the BIA is located in the SWMR including the Houtman Abrolhos Islands	Dampier Archipelago, Montebello, Lowendal and Barrow Island Groups, south Ningaloo and barrier island of Shark Bay	-
Wedge-tailed shearwater	✓	✓	✓	Widespread area of the NWMR offshore and inshore waters	Foraging in high numbers: the BIA is located in the SWMR including the Houtman Abrolhos Islands	-	-
Great frigatebird	✓	-	-	Ashmore Reef, Adele Island	-	-	-
Lesser frigatebird	✓	✓	-	Off Eighty Mile Beach, Lacepedes, Adele Island, North Kimberley and Ashmore Reef	-	-	-
Brown booby	✓	✓	-	Off Eighty Mile Beach, Lacepedes, Adele Island, North Kimberley and Ashmore Reef	-	-	-
Red-footed booby	✓	-	-	Adele Island, Ashmore Reef	-	-	-
Little tern	✓	✓	-	Rowley Shoals, Adele Island	-	-	-
Roseate tern	✓	✓	✓	-	No foraging BIAs in the NWMR Foraging (provisioning young) and foraging BIAs located in the SWMR – Houtman Abrolhos Islands the	Dampier Archipelago, Montebello, Lowendal and Barrow Island Groups, south Ningaloo and barrier island of Shark Bay	Eighty Mile Beach

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Seabird Species	Woodside Activity Area			BIAs			
	Browse	NWS/S	NWC	Breeding/foraging	Foraging	Breeding	Resting
					nearest BIA to the NWMR		
White-tailed tropicbird	✓	-	-			Rowley Shoals Ashmore Reef	

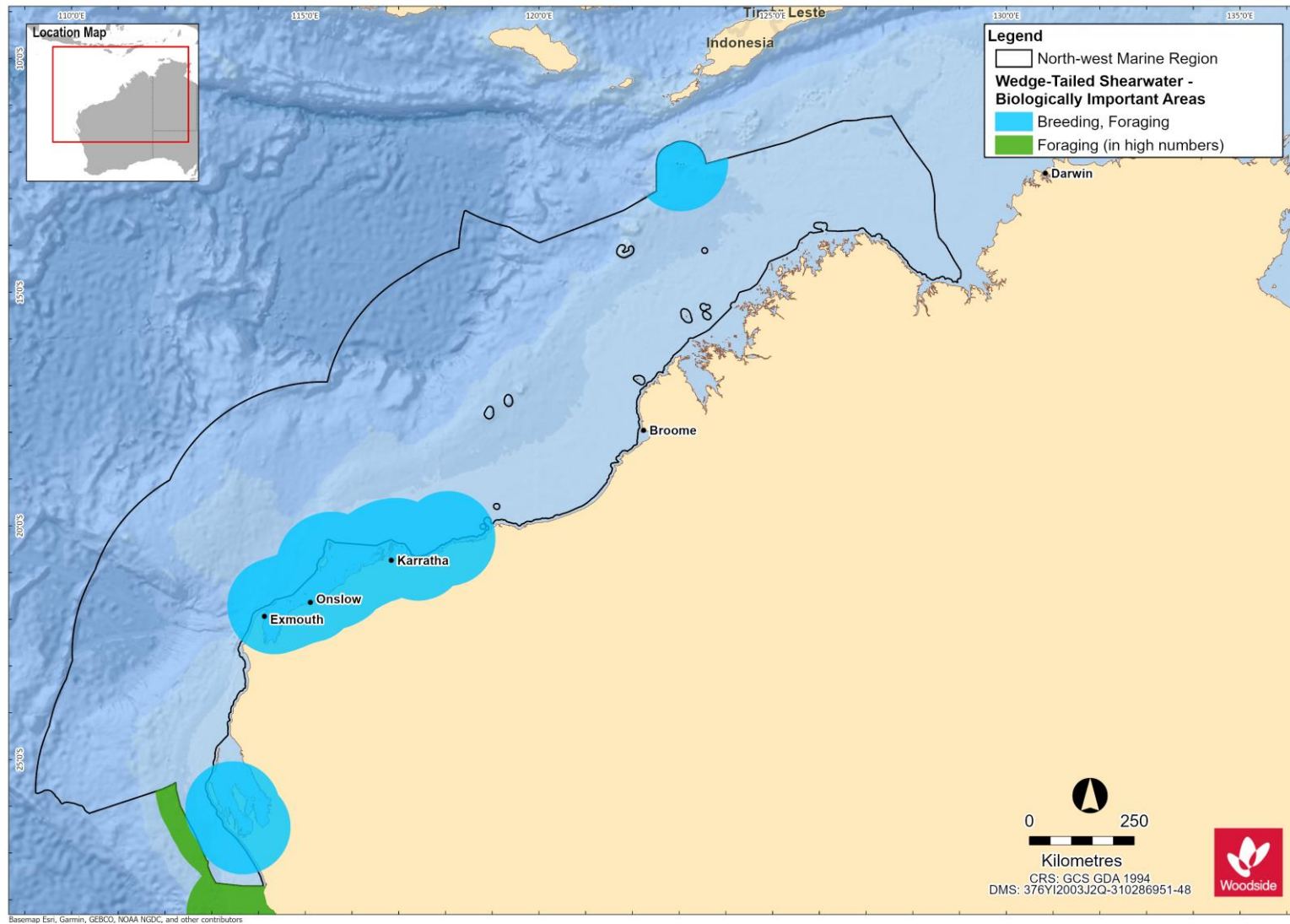


Figure 8-1 Wedge-tailed shearwater BIAs for the NWMR

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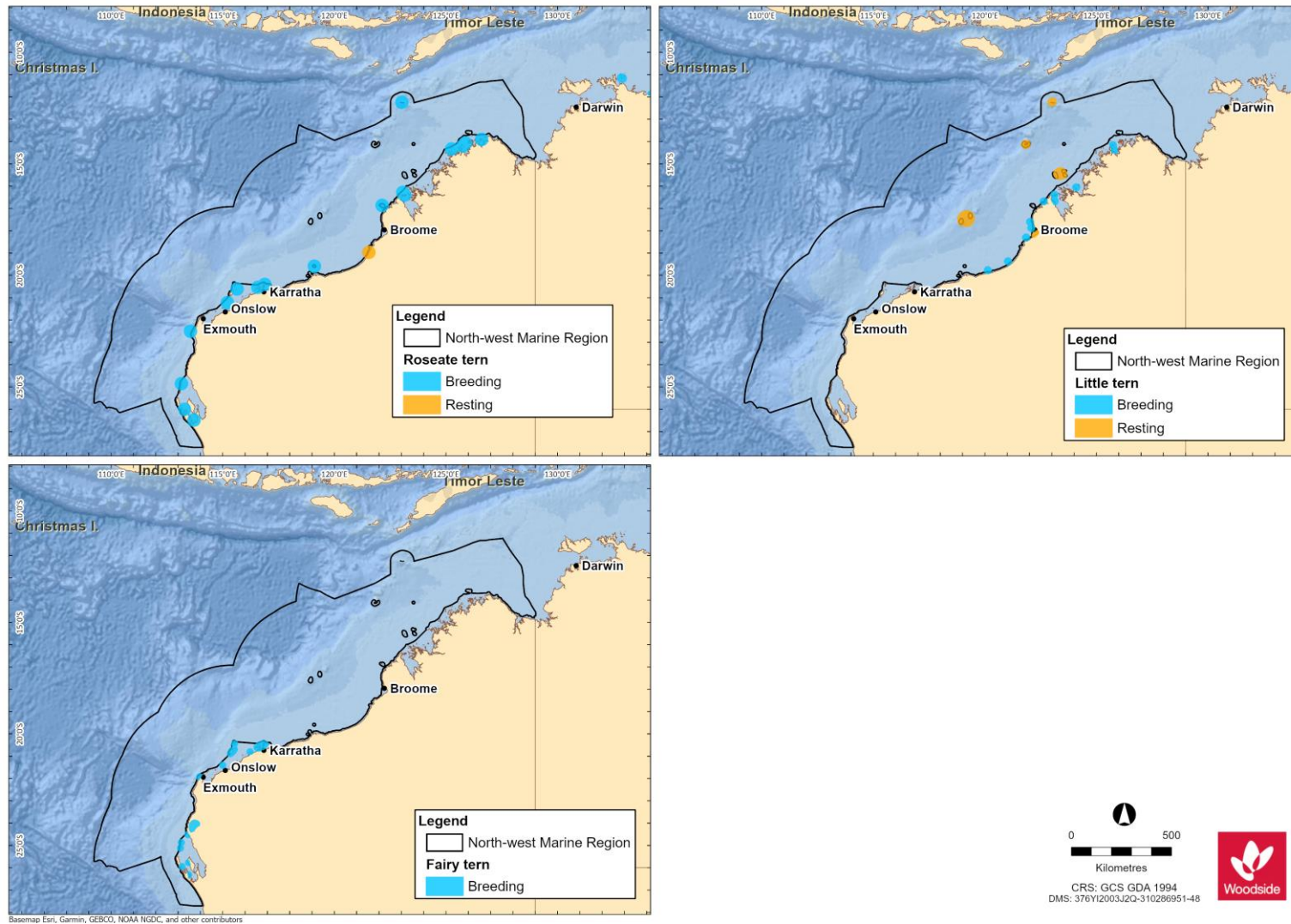


Figure 8-2 Tern species BIAs for the NWMR

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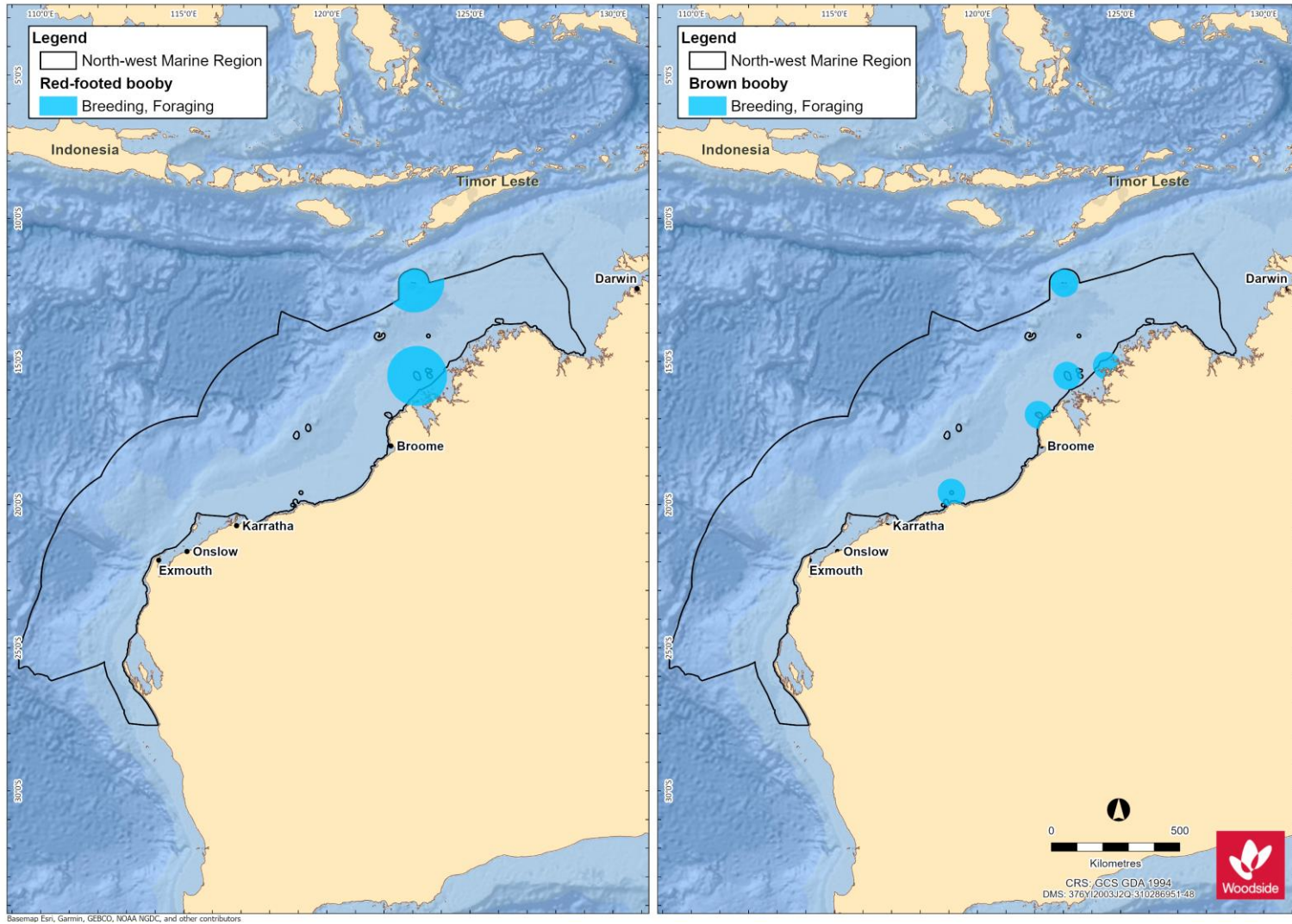


Figure 8-3 Red-footed and brown booby BIAs for the NWMR

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8.2.2 Seabird Summary for NWMR

8.2.2.1 Browse

The Browse activity area includes biologically important habitat for seven threatened and/or migratory seabird species:

- wedge-tailed shearwater (breeding/foraging);
- great and lesser frigatebirds (breeding/foraging);
- brown booby (breeding/foraging);
- red-footed booby (breeding/foraging);
- little tern (breeding/foraging);
- roseate tern (breeding and resting); and,
- white-tailed tropicbird (breeding).

BIAs for the seabird species are outlined in **Table 8-3**.

8.2.2.2 NWS / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for five threatened and/or migratory seabird species:

- wedge-tailed shearwater (breeding/foraging);
- lesser frigatebird (breeding/foraging);
- brown booby (breeding/foraging);
- little tern (breeding/foraging); and
- roseate tern (breeding and resting).

BIAs for the seabird species are outlined in **Table 8-3**.

8.2.2.3 North-west Cape

The North-west Cape activity area includes biologically important habitat for five threatened and/or migratory seabird species:

- Australian fairy tern (breeding);
- wedge-tailed shearwater (breeding/foraging); and
- roseate tern (breeding and resting).

BIAs for the seabird species are outlined in **Table 8-3**.

8.3 Shorebirds

Shorebirds (migratory and resident species) are generally associated with wetland or coastal environments, and the NWMR hosts a large number of many shorebird species, particularly in the Austral summer (refer to **Appendix A** for the EPBC Act PMST reports on listed species of shorebirds). Shorebirds may use coastal environments for feeding, nesting or migratory stopovers. In coastal environments, shorebirds generally feed during low tide on exposed intertidal mud and sand flats, and roost in suitable habitat above the high water mark. Many shorebird species undergo annual migrations, typically breeding at high latitudes of the Northern Hemisphere and migrating south for the non-breeding season and Australia is part of the East Asian-Australasian Flyway (EAAF). The EAAF extends from breeding grounds in the Russian tundra, Mongolia and Alaska

southwards through east and south-east Asia, to non-breeding areas of Indonesia, Papua New Guinea, Australia and New Zealand (Weller and Lee, 2017). The EAAF is of most relevance to the NWMR. There are 37 species of shorebird which annually migrate to Australia via the EAAF and 36 of these species spend the austral summer (non-breeding season) foraging and roosting in coastal and wetland habitats (Commonwealth of Australia, 2015c; Weller and Lee, 2017).

Ashmore Reef is documented as a BIA for migratory shorebirds in the NWMR (DSEWPAC, 2012a).

Table 8-4. Information on threatened/migratory shorebird species of the NWMR

Species	Key Information
Shorebirds	
Eastern curlew, Far eastern curlew	This species is the largest, migratory shorebird in the world, with a long neck, long legs and a very long downcurved bill and is a long-haul flyer. The eastern curlew is a coastal species with a continuous distribution north from Barrow Island to the Kimberley region. The species is endemic to the EAAF and is a non-breeding visitor to Australia from August to March, primarily foraging on crabs and molluscs in intertidal mudflats. During the non-breeding season in Australia, this species is most associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass (DOE, 2015a).
Curlew sandpiper	The curlew sandpiper breeds in northern Siberia but has a non-breeding range that extends from western Africa to Australia, with small numbers reaching New Zealand (Bamford <i>et al.</i> , 2008). In Australia, curlew sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states and the NT during the non-breeding period, and also during the breeding season when many non-breeding one-year old birds remain in Australia rather than migrating north along the EAAF. The species preferred habitat for foraging is mudflats and nearby shallow waters in sheltered coastal areas such as estuaries, bay, inlets and lagoons (DOE, 2015b).
Great knot	The great knot breeds in the Northern Hemisphere and undertakes biannual migrations along the EAAF to non-breeding habitat in Australia. The great knot winters in Australia and has been recorded around the entirety of the Australian coast the greatest numbers are found in northern Western Australia (Pilbara (Dampier Archipelago) and Kimberley and the Northern Territory. In Australia, this species prefers sheltered, coastal habitat with large intertidal mudflats or sandflats (inkling inlets, bays, harbours, estuaries and lagoons). High numbers (exceeding several thousand birds are regularly recorded from Roebuck Bay. The great knot feeds on a variety of invertebrates by pecking at or just below the surface of moist mud or sand (Threatened Species Scientific Committee, 2016a).
Bar-tailed godwit (<i>menzbieri</i>)	The bar-tailed godwit is a large, migratory shorebird and there are two sub-species in the EAAF (<i>Limosa lapponica baueri</i> and <i>L. l. menzbieri</i>). The sub-species <i>L. l. menzbieri</i> breeds in northern Siberia and spends its non-breeding period mostly in the north of WA but also in South-east Asia. The bar-tailed godwit (<i>menzbieri</i>) usually forages near the water in shallow water, mainly in tidal estuaries and harbours with a preference for exposed sandy or soft mud substrates on intertidal flats, banks and beaches (Threatened Species Scientific Committee, 2016c).
Red knot (<i>piersmai</i>)	This species is a small to medium migratory shorebird. There are two sub-species that cannot be distinguished from each other in nonbreeding plumage, however, <i>Calidris canutus piersmai</i> tend to overwinter almost exclusively in north-west Australia. The red knot migrates long distances from breeding grounds in high northern latitudes, where it breeds during the boreal summer, to the Southern Hemisphere during the austral summer with migration along the EAAF. Very large numbers are recorded for the north-west Australia and is common in all suitable habitats around the coast, including inland clay pans near Roebuck Bay (where the species roosts). The red knot usually forages in soft substrate along the waters edge on intertidal mudflats, sandflats and sandy beaches of sheltered coasts (Threatened Species Scientific Committee, 2016b).
Lesser sand plover	The lesser sand plover is a small to medium shorebird and one of 36 migratory shorebirds that breed in the Northern Hemisphere during the boreal summer and are known to annually migrate to the non-breeding grounds of Australia along the EAAF for the austral summer. There are five different sub-species and it is most likely the non-breeding ranges of the sub-species <i>Charadrius m. mongolus</i> overlaps with the NWMR. This species is widespread in coastal regions, preferring sandy beaches, mudflats of coastal bays and estuaries (Threatened Species Scientific Committee, 2016e).
Greater sand plover	The greater sand plover is a small to medium shorebird and in its non-breeding plumage is difficult to distinguish from the lesser sand plover. This species breeds in the Northern

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Species	Key Information
	Hemisphere and undertakes annual migrations to and from Southern Hemisphere feeding grounds in the austral summer along the EAAF. The species distribution in Australia during the non-breeding season is widespread, in WA the greater sand plover is widespread between Northwest Cape and Roebuck Bay (Threatened Species Scientific Committee, 2016d).

9. KEY ECOLOGICAL FEATURES

Key ecological features (KEFs) are elements of the Commonwealth marine environment that are considered to be important for a marine region's biodiversity or ecosystem function and integrity. KEFs have been identified by the Australian Government based on advice from scientists about the ecological processes and characteristics of the area.

KEFs meet one or more of the following criteria:

- a species, group of species, or a community with a regionally important ecological role (e.g. a predator, prey that affects a large biomass or number of other marine species),
- a species, group of species or a community that is nationally or regionally important for biodiversity,
- an area or habitat that is nationally or regionally important for:
 - enhanced or high productivity (such as predictable upwellings – an upwelling occurs when cold nutrient-rich waters from the bottom of the ocean rise to the surface),
 - aggregations of marine life (such as feeding, resting, breeding or nursery areas), or
 - biodiversity and endemism (species which only occur in a specific area),
- a unique seafloor feature, with known or presumed ecological properties of regional significance.

Thirteen KEFs are designated within the NWMR, twelve KEFs within the SWMR and eight KEFs within the NMR. These KEFs have been identified in the Protected Matters search (**Appendix A**) and outlined in **Table 9-1**, **Table 9-2** and **Table 9-3**, and **Figure 9-1**, **Figure 9-2** and **Figure 9-3**.

Table 9-1 Key Ecological Features (KEF) within the NWMMR

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 NWMMR and NMR (refer Table 9-3)</p>	<p>The Pinnacles of the Bonaparte Basin provide areas of hard substrate in an otherwise relatively featureless environment, the pinnacles are likely to support a high number of species, although a better understanding of the species richness and diversity associated with these structures is required (DSEWPAC, 2012a, 2012c). Covering >520 km² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The Pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely that the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds, and foraging turtles (DSEWPAC, 2012a, 2012c).</p>
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	✓	-	-	<p>High productivity, biodiversity and aggregation of marine life that apply to both the benthic and pelagic habitats within the feature</p>	<p>Ashmore Reef is the largest of only three emergent oceanic reefs present in the north-eastern Indian Ocean and is the only oceanic reef in the region with vegetated islands. Ashmore contains a large reef shelf, two large lagoons, several channelled carbonate sand flats, shifting sand cays, an extensive reef flat, three vegetated islands—East, Middle and West islands—and</p>

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KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
					surrounding waters. Rising from a depth of more than 100 m, the reef platform is at the edge of the NWS and covers an area of 239 km ² . Ashmore Reef and Cartier Island and the surrounding Commonwealth waters are regionally important for feeding and breeding aggregations of birds and other marine life; they are areas of enhanced primary productivity in an otherwise low-nutrient environment (DSEWPAC, 2012a). Ashmore Reef supports the highest number of coral species of any reef off the WA coast.
Seringapatam Reef and the Commonwealth waters in the Scott Reef complex	✓	-	-	Support diverse aggregations of marine life, have high primary productivity relative to other parts of the region, are relatively pristine and have high species richness, which apply to both the benthic and pelagic habitats within the feature	Seringapatam Reef and the Commonwealth waters in the Scott Reef complex are regionally important in supporting the diverse aggregations of marine life, high primary productivity, and high species richness associated with the reefs themselves. As two of the few offshore reefs in the north-west, they provide an important biophysical environment in the region (DSEWPAC, 2012a).
Continental slope demersal fish communities	✓	✓	✓	High biodiversity of demersal fish assemblages, including high levels of endemism	The diversity of demersal fish assemblages on the continental slope in the Timor Province, the Northwest Transition and the North-west Province is high compared to elsewhere along the Australian continental slope (DSEWPAC, 2012a). The continental slope between North-west Cape and the Montebello Trough has more than 500 fish species, 76 of which are endemic, which makes it the most diverse slope bioregion in Australia (Last <i>et al.</i> , 2005). The slope of the Timor Province and the Northwest Transition also contains more than 500 species of demersal fishes of which 64 are considered endemic (Last <i>et al.</i> , 2005), making it the second richest area for demersal fishes throughout the whole continental slope. Demersal fish species occupy two distinct demersal biomes associated with the upper slope (225–500 m water depths) and the mid-slope (750–1000 m). Although poorly known, it is suggested that the demersal slope communities rely on bacteria and detritus-based systems comprised of infauna and epifauna, which in turn become prey for a range of teleost fishes, molluscs and crustaceans (Brewer <i>et al.</i> , 2007). Higher-order consumers may include carnivorous fishes, deepwater sharks, large squid, and toothed whales (Brewer <i>et al.</i> , 2007). Pelagic production is phytoplankton-based, with hot spots around oceanic reefs and islands (Brewer <i>et al.</i> , 2007).

KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
Ancient coastline at 125 m depth contour	✓	✓	✓	<p>Unique seafloor feature with ecological properties of regional significance</p> <p>Provides areas of hard substrate and therefore may provide sites for higher diversity and enhanced species richness relative to surrounding areas of predominantly soft sediment</p>	<p>Several steps and terraces as a result of Holocene sea level changes occur in the region, with the most prominent of these features occurring as an escarpment along the NWMR and Sahul Shelf at a water depth of 125 m.</p> <p>The Ancient Coastline is not continuous throughout the NWMR and coincides with a well-documented eustatic stillstand at about 130 m worldwide (Falkner <i>et al.</i>, 2009).</p> <p>Where the Ancient Coastline provides areas of hard substrate, it may contribute to higher diversity and enhanced species richness relative to soft sediment habitat (Falkner <i>et al.</i>, 2009). Parts of the Ancient Coastline, represented as rocky escarpment, are considered to provide biologically important habitat in an area predominantly made up of soft sediment.</p> <p>The escarpment type features may also potentially facilitate mixing within the water column due to upwelling, providing a nutrient-rich environment. Although the Ancient Coastline adds additional habitat types to a representative system, the habitat types are not unique to the coastline as they are widespread on the upper shelf (Falkner <i>et al.</i>, 2009)</p>
Canyons linking the Argo Abyssal Plain and Scott Plateau	-	✓	-	<p>Facilitates nutrient upwelling, creating enhanced productivity and encouraging diverse aggregations of marine life</p>	<p>Interactions with the Leeuwin Current and strong internal tides are thought to result in upwelling at the canyon heads, thus creating conditions for enhanced productivity in the region (Brewer <i>et al.</i>, 2007). As a result, aggregations of whale sharks, manta rays, humpback whales, sea snakes, sharks, predatory fishes and seabirds are known to occur in the area due to its enhanced productivity (Sleeman <i>et al.</i>, 2007).</p>
Glomar Shoal	-	✓	-	<p>An area of high productivity and aggregations of marine life including commercial and recreational fish species</p>	<p>Glomar Shoal is a submerged littoral feature located about 150 km north of Dampier on the Rowley shelf at depths of 33–77 m (Falkner <i>et al.</i>, 2009). Studies by Abdul Wahab <i>et al.</i> (2018) found a number of hard coral and sponge species in water depths less than 40 m. One hundred and seventy (170) different species of fishes were detected with greatest species richness and abundance in shallow habitats (Abdul Wahab <i>et al.</i>, 2018). Fish species present include a number of commercial and recreational species such as Rankin cod, brown striped snapper, red emperor, crimson snapper, bream and yellow-spotted triggerfish (Falkner <i>et al.</i>, 2009; Fletcher and Santoro, 2009). These species have recorded high catch rates associated with Glomar Shoal, indicating that the shoal is likely to be an area of high productivity.</p>

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KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
Mermaid Reef and Commonwealth waters surrounding Rowley Shoals	-	✓	-	Regionally important in supporting high species richness, higher productivity and aggregations of marine life	The Mermaid Reef and Commonwealth waters surrounding the Rowley Shoals KEF and is adjacent to the three nautical mile State waters limit surrounding Clerke and Imperieuse reefs, and include the Mermaid Reef Marine Park as described in Section 10 . The reefs provide a distinctive biophysical environment in the region. They have steep and distinct reef slopes and associated fish communities. In evolutionary terms, the reefs may play a role in supplying coral and fish larvae to reefs further south via the southward flowing Indonesian Throughflow. Both coral communities and fish assemblages differ from similar habitats in eastern Australia (Done <i>et al.</i> , 1994).
Exmouth Plateau	-	✓	✓	Unique seafloor feature with ecological properties of regional significance, which apply to both benthic and pelagic habitats Likely to be an important area of biodiversity as it provides an extended area offshore for communities adapted to depths of approximately 1000 m	The Exmouth Plateau is a large, mid-slope, continental margin plateau that lies off the northwest coast of Australia. It ranges in depth from about 500 to more than 5000 m and is a major structural element of the Carnarvon Basin (Miyazaki and Stagg, 2013). The large size of the Exmouth Plateau and its expansive surface may modify deep water flow and be associated with the generation of internal tides; both of which may subsequently contribute to the upwelling of deeper, nutrient-rich waters closer to the surface (Brewer <i>et al.</i> , 2007). Satellite observations suggest that productivity is enhanced along the northern and southern boundaries of the plateau (Brewer <i>et al.</i> , 2007). Sediments on the plateau suggest that biological communities include scavengers, benthic filter feeders and epifauna (DSEWPAC, 2012a). Fauna in the pelagic waters above the plateau are likely to include small pelagic species and nekton attracted to seasonal upwellings, as well as larger predators such as billfishes, sharks and dolphins (Brewer <i>et al.</i> , 2007). Protected and migratory species are also known to pass through the region, including whale sharks and cetaceans.
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	-	-	✓	Unique seafloor feature with ecological properties of regional significance The feature is an area of moderately enhanced productivity, attracting aggregations of fish and higher-order consumers such as large predatory	The canyons are associated with upwelling as they channel deep water from the Cuvier Abyssal Plain up onto the slope. This nutrient-rich water interacts with the Leeuwin Current at the canyon heads (DSEWPAC, 2012a). Aggregations of whale sharks, manta rays, sea snakes, sharks, large predatory fish, and seabirds are known to occur in this area.

KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
				fish, sharks, toothed whales and dolphins Likely to be important due to their historical association with sperm whale aggregations	
Commonwealth waters adjacent to Ningaloo Reef	-	-	✓	High productivity and diverse aggregations of marine life The Commonwealth waters adjacent to Ningaloo Reef and associated canyons and plateau are interconnected and support the high productivity and species richness of Ningaloo Reef, globally significant as the only extensive coral reef in the world that fringes the west coast of a continent	The Leeuwin and Ningaloo currents interact, leading to areas of enhanced productivity in the Commonwealth waters adjacent to Ningaloo Reef. Aggregations of whale sharks, manta rays, humpback whales, sea snakes, sharks, large predatory fish, and seabirds are known to occur in this area (DSEWPAC, 2012a). The spatial boundary of this KEF, as defined in the NCVA, is defined as the waters contained in the existing Ningaloo AMP provided in Section 10 .
Wallaby Saddle	-	-	✓	High productivity and aggregations of marine life: Representing almost the entire area of this type of geomorphic feature in the NWMR. It is a unique habitat that neither occurs anywhere else nearby (within hundreds of kilometres) nor with as large an area (Falkner <i>et al.</i> 2009)	The Wallaby Saddle may be an area of enhanced productivity. Historical whaling records provide evidence of sperm whale aggregations in the area of the Wallaby Saddle, possibly due to the enhanced productivity of the area and aggregations of baitfish (DSEWPAC, 2012a).

¹: Values description sourced from Marine bioregional plan for the North-west Marine Region (DSEWPAC, 2012a) and the Department of Agriculture, Water and the Environment (DAWE) SPRAT database.

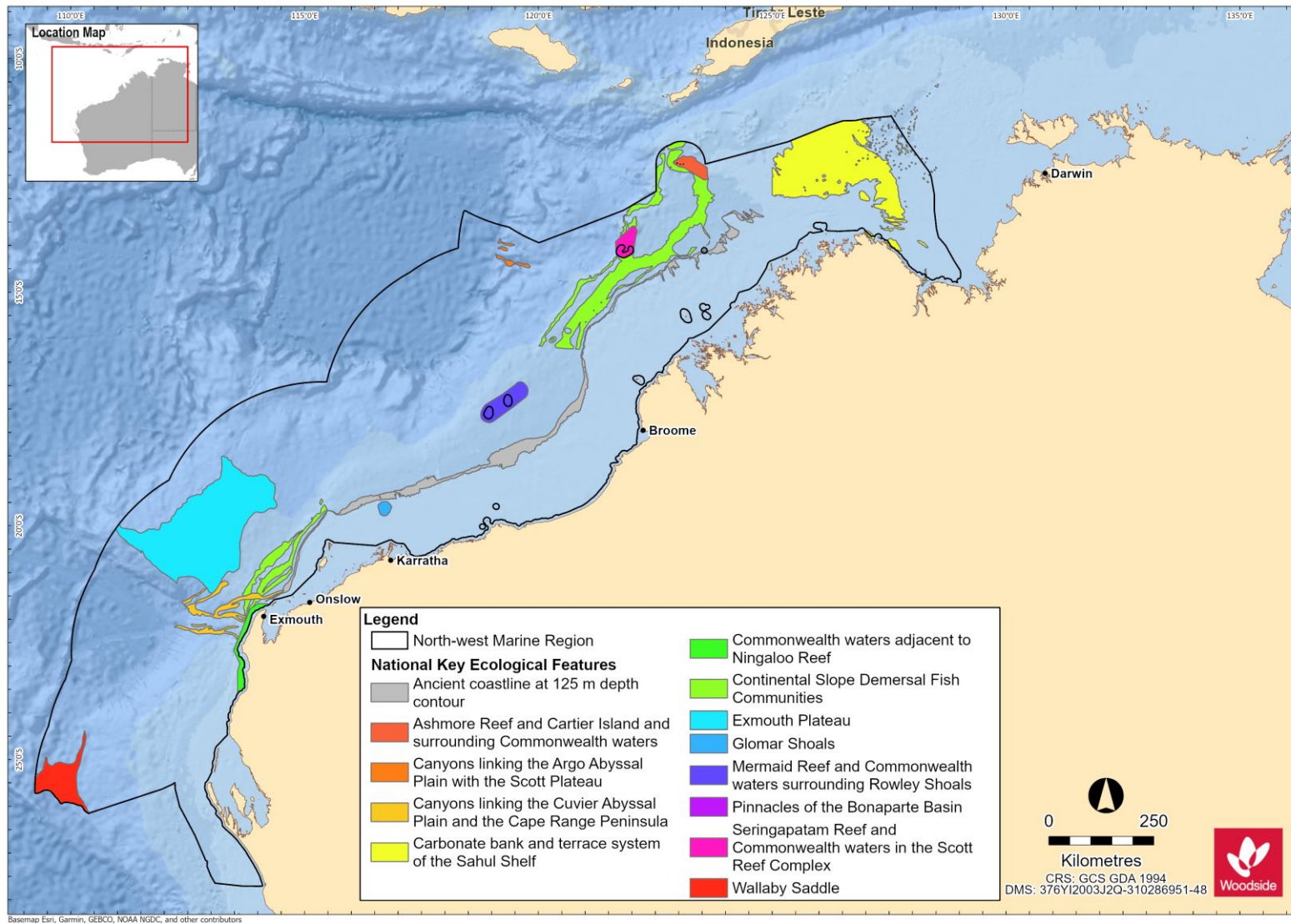


Figure 9-1 Key Ecological Features (KEFs) within the NWMR.

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Table 9-2 Key Ecological Features (KEF) within the SWMR

KEF Name	Values ¹	Description
Albany Canyons group and adjacent shelf break	High productivity and aggregations of marine life, and unique seafloor feature with ecological properties of regional significance Both benthic and demersal habitats within the feature are of conservation value	The Albany Canyons group is thought to be associated with small, periodic subsurface upwelling events, which may drive localised regions of high productivity. The canyons are known to be a feeding area for sperm whale and sites of orange roughly aggregations. Anecdotal evidence also indicates that this area supports fish aggregations that attract large predatory fish and sharks.
Ancient coastline at 90-120 m depth	Relatively high productivity and aggregations of marine life, and high levels of biodiversity and endemism The feature creates topographic complexity, that may facilitate benthic biodiversity and enhanced biological productivity	Benthic biodiversity and productivity occur where the ancient coastline forms a prominent escarpment, such as in the western Great Australian Bight, where the sea floor is dominated by sponge communities of significant biodiversity and structural complexity.
Cape Mentelle upwelling	Facilitates nutrient upwelling, supporting high productivity and diverse aggregations of marine life	The Cape Mentelle upwelling draws relatively nutrient-rich water from the base of the Leeuwin Current, up the continental slope and onto the inner continental shelf, where it results in phytoplankton blooms at the surface. The phytoplankton blooms provide the basis for an extended food chain characterised by feeding aggregations of small pelagic fish, larger predatory fish, seabirds, dolphins and sharks.
Commonwealth marine environment surrounding the Houtman Abrolhos Islands (and adjacent shelf break)	High levels of biodiversity and endemism within benthic and pelagic habitats	The Houtman Abrolhos Islands and surrounding reefs support a unique mix of temperate and tropical species, resulting from the southward transport of species by the Leeuwin Current over thousands of years. The Houtman Abrolhos Islands are the largest seabird breeding station in the eastern Indian Ocean. They support more than one million pairs of breeding seabirds.

KEF Name	Values ¹	Description
Commonwealth marine environment surrounding the Recherche Archipelago	Aggregations of marine life and high levels of biodiversity and endemism within benthic and demersal communities	The Recherche Archipelago is the most extensive area of reef in the SWMR. Its reef and seagrass habitat supports a high species diversity of warm temperate species, including 263 known species of fish, 347 known species of molluscs, 300 known species of sponges, and 242 known species of macroalgae. The islands also provide haul-out (resting areas) and breeding sites for Australian sea lions and New Zealand fur seals.
Commonwealth marine environment within and adjacent to the west-coast inshore lagoons	High productivity and aggregations of marine life within benthic and pelagic habitats Important for benthic productivity and recruitment for a range of marine species	These lagoons are important for benthic productivity, including macroalgae and seagrass communities, and breeding and nursery aggregations for many temperate and tropical marine species. They are important areas for the recruitment of commercially and recreationally important fish species. Extensive schools of migratory fish visit the area annually, including herring, garfish, tailor and Australian salmon.
Commonwealth marine environment within and adjacent to Geographe Bay	High productivity and aggregations of marine life, and high levels of biodiversity, recruitment within benthic and pelagic communities	Geographe Bay is known for its extensive beds of tropical and temperate seagrass that support a diversity of species, many of them not found anywhere else. The bay provides important nursery habitat for many species. Juvenile dusky whaler sharks use the shallow seagrass habitat as nursery grounds for several years, before ranging out to adult feeding grounds along the shelf break. The seagrass also provides valuable habitat for fish and invertebrates (Carruthers <i>et al.</i> , 2007). It is also an important resting area for migratory humpback whales.
Diamantina Fracture Zone	Unique seafloor feature with ecological properties of regional significance which apply to its benthic and demersal habitats	The Diamantina Fracture Zone is a rugged, deep- water environment of seamounts and numerous closely spaced troughs and ridges. Very little is known about the ecology of this remote, deep- water feature, but marine experts suggest that its size and physical complexity mean that it is likely to support deep-water communities characterised by high species diversity, with many species found nowhere else.
Naturaliste Plateau	Unique seafloor feature with ecological properties of regional significance including high species diversity and endemism which apply to its benthic and demersal habitats	The Naturaliste Plateau is Australia's deepest temperate marginal plateau. The combination of its structural complexity, mixed water dynamics and relative isolation indicate that it supports deep- water communities with high species diversity and endemism.
Perth Canyon and adjacent shelf break, and other west-coast canyons	An area of higher productivity that attracts feeding aggregations of deep-diving mammals and large predatory fish. It is also recognised as a unique seafloor feature with ecological properties of regional significance	The Perth Canyon is the largest known undersea canyon in Australian waters. Deep ocean currents rise to the surface, creating a nutrient-rich cold- water habitat attracting feeding aggregations of deep-diving mammals, such as pygmy blue whales and large predatory fish that feed on aggregations of small fish, krill and squid.

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KEF Name	Values ¹	Description
Western demersal slope and associated fish communities of the Central Western Province	Provides important habitat for demersal fish communities and supports species groups that are nationally or regionally important to biodiversity	The western demersal slope provides important habitat for demersal fish communities, with a high level of diversity and endemism. A diverse assemblage of demersal fish species below a depth of 400 m is dominated by relatively small benthic species such as grenadiers, dogfish and cucumber fish. Unlike other slope fish communities in Australia, many of these species display unique physical adaptations to feed on the sea floor (such as a mouth position adapted to bottom feeding), and many do not appear to migrate vertically in their daily feeding habits.
Western rock lobster	A species that plays a regionally important ecological role	This species is the dominant large benthic invertebrate in the region. The lobster plays an important trophic role in many of the inshore ecosystems of the SWMR. Western rock lobsters are an important part of the food web on the inner shelf, particularly as juveniles.

¹. Values description sourced from Marine bioregional plan for the South-west Marine Region (DSEWPAC, 2012b) and the Department of Agriculture, Water and the Environment (DAWE) SPRAT database

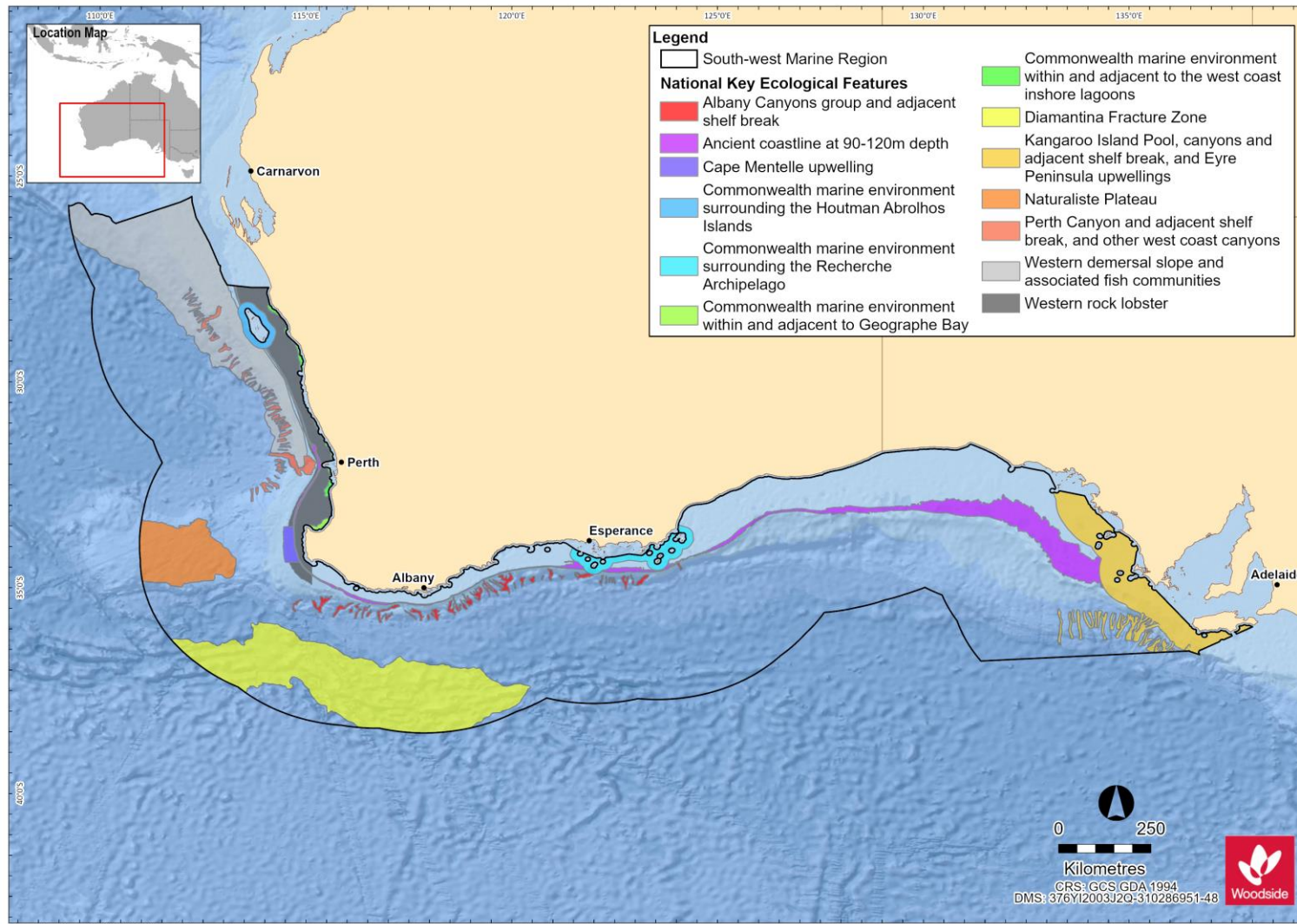


Figure 9-2. Key Ecological Features (KEFs) within the SWMR

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Table 9-3 Key Ecological Features (KEF) within the NMR

KEF Name	Values ¹	Description
Carbonate bank and terrace system of the Van Diemen Rise	Important for its role in enhancing biodiversity and local productivity relative to its surrounds and for supporting relatively high species diversity The feature has been identified as a sponge biodiversity hotspot (Przeslawski <i>et al.</i> 2014)	The bank and terrace system of the Van Diemen Rise is part of the larger system associated with the Sahul Banks to the north and Londonderry Rise to the east; it is characterised by terrace, banks, channels and valleys. The variability in water depth and substrate composition may contribute to the presence of unique ecosystems in the channels. Species present include sponges, soft corals and other sessile filter feeders associated with hard substrate sediments of the deep channels; epifauna and infauna include polychaetes and ascidians. Olive ridley turtles, sea snakes and sharks are also found associated with this feature.
Gulf of Carpentaria basin	Regional importance for biodiversity, endemism and aggregations of marine life relevant to benthic and pelagic habitats	The Gulf of Carpentaria basin is one of the few remaining near-pristine marine environments in the world. Primary productivity in the Gulf of Carpentaria basin is mainly driven by cyanobacteria that fix nitrogen but is also strongly influenced by seasonal processes. The soft sediments of the basin are characterised by moderately abundant and diverse communities of infauna and mobile epifauna dominated by polychaetes, crustaceans, molluscs, and echinoderms. The basin also supports assemblages of pelagic fish species including planktivorous and schooling fish, with top predators such as shark, snapper, tuna, and mackerel.
Gulf of Carpentaria coastal zone	High productivity, aggregations of marine life (including several endemic species) and high biodiversity compared to broader region	Nutrient inflow from rivers adjacent to the NMR generates higher productivity and more diverse and abundant biota within the Gulf of Carpentaria coastal zone than elsewhere in the region. The coastal zone is near pristine and supports many protected species such as marine turtles, dugongs, and sawfishes. Ecosystem processes and connectivity remain intact; river flows are mostly uninterrupted by artificial barriers and healthy, diverse estuarine and coastal ecosystems support many species that move between freshwater and saltwater environments.
Pinnacles of the Bonaparte Basin	Unique seafloor feature with ecological properties of regional significance Provide areas of hard substrate in an otherwise soft sediment environment and so are important for sessile species Recognised as a biodiversity hotspot for sponges The Pinnacles of the Bonaparte Basin KEF is located within both the NWMR and NMR (refer Table 9-1)	Covering more than 520 km ² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The Pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely that the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds and foraging turtles.

KEF Name	Values ¹	Description
Plateaux and saddle north-west of the Wellesley Islands	High species abundance, diversity and endemism of marine life	Abundance and species density are high in the plateaux and saddle as a result of increased biological productivity associated with habitats rather than currents. Submerged reefs support corals that are typical of northern Australia, including corals that have bleach-resistant zooxanthellae; and particular reef fish species that are different to those found elsewhere in the Gulf of Carpentaria. Species present include marine turtles and reef fish such as coral trout, cod, mackerel, and shark. Seabirds frequent the plateaux and saddle, most likely due to the presence of predictable food resources for feeding offspring.
Shelf break and slope of the Arafura Shelf	The Shelf break and slope of the Arafura Shelf is defined as a key ecological feature for its ecological significance associated with productivity emanating from the slope It also forms part of a unique biogeographic province (Last <i>et al.</i> , 2005)	The shelf break and slope of the Arafura Shelf is characterised by continental slope and patch reefs and hard substrate pinnacles. The ecosystem processes of the feature are largely unknown in the region; however, the Indonesian Throughflow and surface wind-driven circulation are likely to influence nutrients, pelagic dispersal and species and biological productivity in the region. Biota associated with the feature is largely of Timor–Indonesian Malay affinity.
Submerged coral reefs of the Gulf of Carpentaria	High aggregations of marine life, biodiversity and endemism Twenty per cent of the reefs found in the NMR are situated within this KEF (Harris <i>et al.</i> , 2007)	The submerged coral reefs of the Gulf of Carpentaria are characterised by submerged patch, platform and barrier reefs that form a broken margin around the perimeter of the Gulf of Carpentaria basin, rising from the sea floor at depths of 30–50 m. These reefs provide breeding and aggregation areas for many fish species including mackerel and snapper and offer refuges for sea snakes and apex predators such as sharks. Coral trout species that inhabit the submerged reefs are smaller than those found in the Great Barrier Reef and may prove to be an endemic sub-species.
Tributary Canyons of the Arafura Depression	High productivity and high levels of species diversity and endemism of marine life within the benthic and pelagic habitats of the feature	The tributary canyons are approximately 80–100 m deep and 20 km wide. The largest of the canyons extend some 400 km from Cape Wessel into the Arafura Depression, and are the remnants of a drowned river system that existed during the Pleistocene era. Sediments in this feature are mainly calcium-carbonate rich, although sediment type varies from sandy substrate to soft muddy sediments and hard, rocky substrate. Marine turtles, deep sea sponges, barnacles and stalked crinoids have all been identified in the area.

¹. Values description sourced from *Marine bioregional plan for the North Marine Region (DSEWPAC, 2012c)* and *Department of Agriculture, Water and the Environment (DAWE) SPRAT database*.

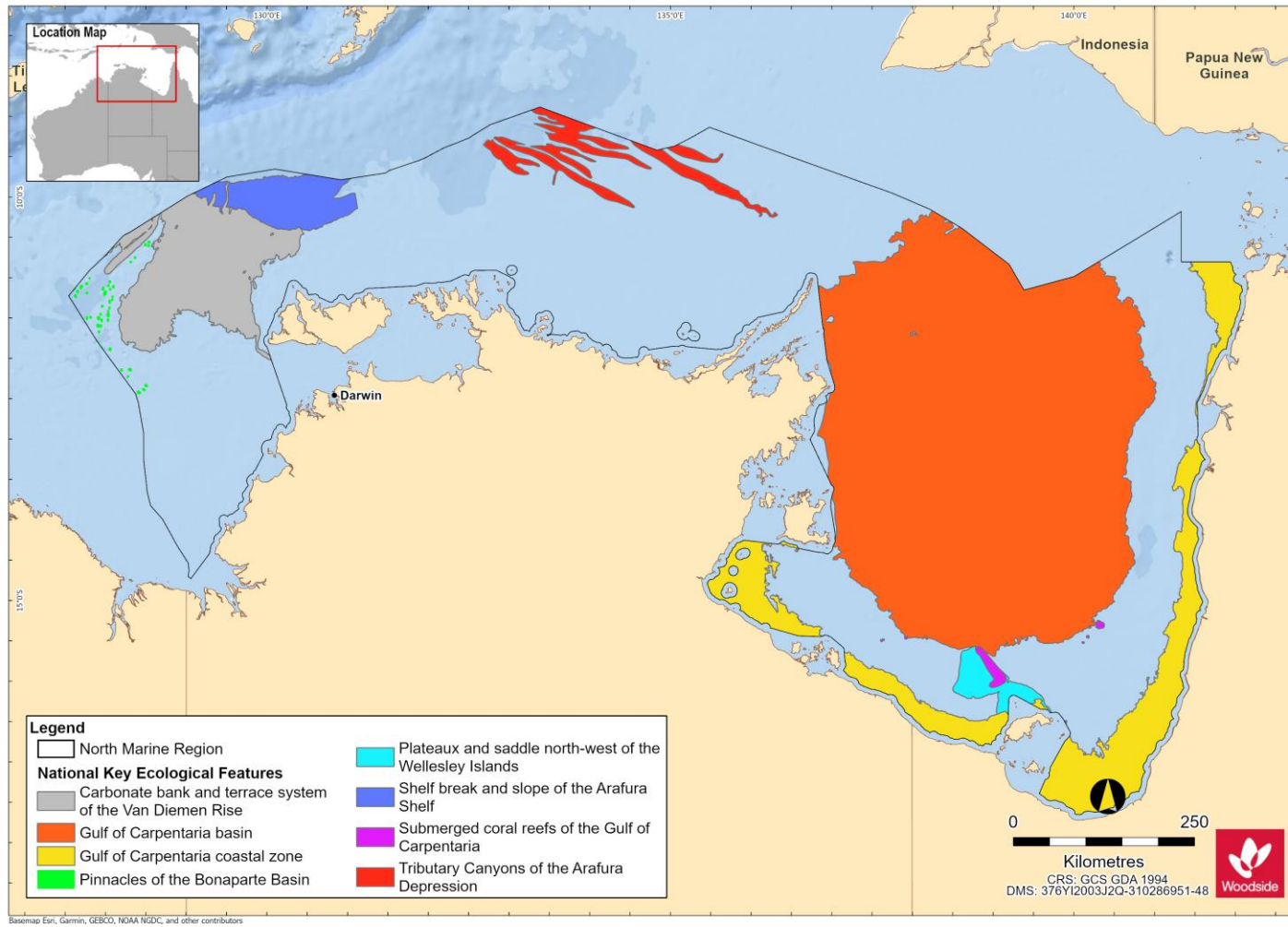


Figure 9-3. Key Ecological Features (KEFs) within the NMR

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10. PROTECTED AREAS

10.1 Regional Context

Protected areas included World Heritage Properties, National Heritage Places, Wetlands of International Importance, Australian Marine Parks, State Marine Parks and Reserves, Threatened Ecological Communities and the Australian Whale Sanctuary. The PMST Reports (**Appendix A**) shows that there are twenty-nine protected areas found in the NWMR, eighteen in the SWMR and nine in the NMR.

Table 10-1, **Table 10-2** and **Table 10-3** outline the protected areas of each of the marine regions NWMR, SWMR and NMR, respectively.

10.2 World Heritage Properties

Properties nominated for World Heritage listing are inscribed on the list only after they have been carefully assessed as representing the best examples of the world's cultural and natural heritage. Only World Heritage listings classed as natural are discussed in this section. World Heritage sites classed as cultural are discussed in **Section 11**.

The list of Australia's World Heritage Properties and the PMST Reports (**Appendix A**) show two World Heritage Properties within the NWMR (**Table 10-1**), no World Heritage Properties within the SWMR (**Table 10-2**), and though not reported in the NMR PMST Report, Kakadu National Park and World Heritage Area is included in **Table 10-3**.

10.3 National and Commonwealth Heritage Places - Natural

The National Heritage List is Australia's list of natural, historic, and Indigenous places of outstanding significance to the nation. The National Heritage List Spatial Database describes the place name, class (Indigenous, natural, historic), and status. Commonwealth Heritage Places are a collection of sites recognised for their Indigenous, historical and/or natural values which are owned or controlled by the Australian Government.

Only National and Commonwealth Heritage Places classed as natural are discussed in this section. Heritage Places classed as indigenous or historic are discussed in **Section 11**.

A search of the National Heritage List Spatial Database and the PMST Reports (**Appendix A**) identified three natural National Heritage Places in the NWMR (**Table 10-1**), three in the SWMR (**Table 10-2**) and for the NMR, Kakadu National Park (not included in the PMST report) is included in **Table 10-3**.

A search of the Commonwealth Heritage List identified four natural commonwealth heritage places within the NWMR (**Table 10-1**).

10.4 Wetlands of International Importance (listed under the Ramsar Convention)

Australia has 65 Ramsar wetlands that cover >8.3 million ha. Ramsar wetlands are those that are representative, rare, or unique wetlands, or that are important for conserving biological diversity.

The List of Wetlands of International Importance held under the Ramsar Convention and the PMST Reports (**Appendix A**) identified four Ramsar Sites with coastal features within the NWMR (**Table 10-1**), four in the SWMR (**Table 10-2**) and two for the New Territory, included for the NMR (**Table 10-3**).

10.5 Australian Marine Parks

Australian Marine Parks (AMPs), proclaimed under the EPBC Act in 2007 and 2013, are located in Commonwealth waters that start at the outer edge of State and Territory waters, generally three

nautical miles (~5.5 km) from the shore, and extend to the outer boundary of Australia's EEZ, 200 nm (~370 km) from the shore.

PMST Reports (**Appendix A**) show sixteen AMPs within the NWMR (**Table 10-1**), ten within the SWMR (**Table 10-2**) and eight within the NMR (**Table 10-3**).

10.6 Threatened Ecological Communities

No Threatened Ecological Communities (TECs) as listed under the EPBC Act are known to occur within the marine waters of the NWMR, SWMR or NMR as indicated by the PMST Reports (**Appendix A**).

10.7 Australian Whale Sanctuary

The Australian Whale Sanctuary has been established to protect all whales and dolphins found in Australian waters. Under the EPBC Act all cetaceans (whales, dolphins and porpoises) are protected in Australian waters.

The Australian Whale Sanctuary includes all Commonwealth waters from the three nautical mile State/Territory waters limit out to the boundary of the EEZ (i.e. out to 200 nm and further in some places). Within the Sanctuary it is an offence to kill, injure or interfere with a cetacean. Severe penalties apply to anyone convicted of such offences.

10.8 State Marine Parks and Reserves

State Marine Parks and Reserves, proclaimed under the *Conservation and Land Management Act 1984* (CALM Act), are located in State waters and vested in the WA Conservation and Parks Commission. State Marine Parks and Reserves of Western Australia have been considered, with 14 occurring in the NWMR (**Table 10-1**) and six occurring in the SWMR (**Table 10-2**).

10.9 Summary of Protected Areas within the NWMR

Table 10-1 Protected Areas within the NWMR

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
World Heritage Properties						
Shark Bay World Heritage Property	-	-	✓		The Shark Bay World Heritage Property is adjacent to the Shark Bay AMP and was included on the World Heritage List in 1991.	Universal values of the Shark Bay World Heritage Property include large and diverse seagrass beds, stromatolites and populations of dugong and threatened species. Inscribed under Natural Criteria vii, viii, ix and x.
The Ningaloo Coast World Heritage Property	-	-	✓		The Ningaloo Coast World Heritage Property lies within the Ningaloo AMP and was included on the World Heritage List in 2011.	Universal values of the Ningaloo Coast World Heritage Property include high marine species diversity and abundance; in particular, Ningaloo Reef supports both tropical and temperate marine reptiles and mammals. Inscribed under Natural Criteria vii and x.
National Heritage Places - Natural						
Shark Bay	-	-	✓		The Shark Bay National Heritage Place consists of the same area included in the Shark Bay World Heritage Property (refer above) and was established on the National Heritage List in 2007.	The national heritage place has a number of exceptional natural features, including one of the largest and most diverse seagrass beds in the world, colonies of stromatolites and rich marine life including a large population of dugongs, and also provides a refuge for a number of other globally threatened species. Shark Bay meets the national heritage listing criteria a, b, c, d, e, f, g, h and i.
The Ningaloo Coast	-	-	✓		The Ningaloo Coast National Heritage Place consists of the same area included in the Ningaloo	The Ningaloo Coast contains one of the best developed near-shore reefs in the world, being home to rugged limestone peninsulas, spectacular coral and sponge gardens and the whale shark.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					Coast World Heritage Property (refer above) and was established on the National Heritage List in 2010.	The Ningaloo Coast meets the national heritage listing criteria a, b, c, d, and f.
The West Kimberley	✓	✓	-		The West Kimberley National Heritage Place covers an area of around 192,000 km ² located in the north-west of Australia from Broome to Wyndham, and was established on the National Heritage List in 2011.	The Kimberley plateau, north-western coastline and northern rivers of the West Kimberley provide a vital refuge for many native plants and animals that are found nowhere else or which have disappeared from much of the rest of Australia. In addition, Roebuck Bay is internationally recognised as one of Australia's most significant sites for migratory wading birds. The national heritage place also contains a remarkable history of Aboriginal occupation, with many places of indigenous sacred value. The West Kimberley meets the national heritage listing criteria a, b, c, d, e, f, g, h and i.
Commonwealth Heritage Places - Natural						
Mermaid Reef – Rowley Shoals	-	✓	-	N/A	The Mermaid Reef – Rowley Shoals Commonwealth Heritage Place is located within the boundary of the Mermaid Reef Marine National Nature Reserve. The site was listed as a Commonwealth Heritage Place in 2004.	The Mermaid Reef-Rowley Shoals Commonwealth Heritage Place is regionally important for the diversity of its fauna and together with Clerke and Imperieuse reefs, has biogeographical significance due to the presence of species which are at, or close to, the limits of their geographic ranges, including fishes known previously only from Indonesian waters. Rowley Shoals is important for benchmark studies as one of the few places off the north-west coast of Western Australia which have been the site of major biological collection trips by the WA Museum.

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Ashmore Reef National Nature Reserve	✓	-	-		The Ashmore Reef Commonwealth Heritage Place is located within the boundary of the Ashmore Reef Marine Park (refer AMPs below). The site was listed as a Commonwealth Heritage Place in 2004.	Ashmore Reef has major significance as a staging point for wading birds migrating between Australia and the Northern Hemisphere and supports high concentrations of breeding seabirds, many of which are nomadic and typically breed on small isolated islands. Ashmore Reef is an important scientific reference area for migratory seabirds, sea snakes and marine invertebrates. The Ashmore Reef Commonwealth Heritage Place is significant for its history of human occupation and use. The island is believed to have been visited by Indonesian fisherman since the early eighteenth century. The islands were used both for fishing and as a staging point for voyages to the southern reefs off Australia's coast.
Scott Reef and Surrounds – Commonwealth Area	✓	-	-		Scott Reef and Surrounds Commonwealth Heritage Place is located within the Western Australian Coastal Waters surrounding North and South Scott Reef. The site was listed as a Commonwealth Heritage Place in 2004.	The Scott Reef and Surrounds Commonwealth Heritage Place is regionally important for the diversity of its fauna and has biogeographical significance due to the presence of species which are at, or close to, the limits of their geographic ranges, including fish known previously only from Indonesian waters. Scott Reef is recognised as important for scientific research and benchmark studies due to its age, the extensive documentation of its geophysical and physical environmental characteristics and its use as a site of major biological collection trips and surveys by the WA Museum and the Australian Institute of Marine Science.

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Ningaloo Marine Area – Commonwealth Waters	-	-	✓		The Ningaloo Marine Area Commonwealth Heritage Place is located within the Commonwealth waters of the Ningaloo Marine Park (refer AMPs below). The site was listed as a Commonwealth Heritage Place in 2004.	The Ningaloo Marine Area Commonwealth Heritage Place provides a migratory pathway for humpback whales and foraging habitat for whale sharks. The place is an important breeding area for billfish and manta ray. The Ningaloo Marine Area provides opportunities for scientific research relating to aspects of the area's unique features including tourism (marine ecology, whales, turtles, whale sharks, fish and oceanography).
Wetlands of International Importance (Ramsar)						
Ashmore Reef National Nature Reserve	✓	-	-	Ramsar	The Ashmore Reef Ramsar site is located within the boundary of the Ashmore Reef Marine Park (refer AMPs below). The site was listed under the Ramsar Convention in 2002.	Ashmore Reef Ramsar site supports internationally significant populations of seabirds and shorebirds, is important for turtles (green, hawksbill and loggerhead) and dugong, and has the highest diversity of hermatypic (reef-building) corals on the WA coast. It is known for its abundance and diversity of sea snakes. However, since 1998 populations of sea snakes at Ashmore Reef have been in decline.
Eighty Mile Beach	-	✓	-	Ramsar	The Eighty Mile Beach Ramsar site covers an area of 1250 km ² , located along a long section of the Western Australian coastline adjacent to the Eighty Mile Beach AMP (refer below).	The Eighty Mile Beach Ramsar site includes saltmarsh and a raised peat bog more than 7000 years old. The site contains the most important wetland for waders in north-western Australia, supporting up to 336,000 birds, and is especially important as a land fall for waders migrating south for the austral summer.
Roebuck Bay	-	✓	-	Ramsar	The Roebuck Bay Ramsar site covers an area of 550	The Roebuck Bay Ramsar site is recognised as one of the most important areas for migratory shorebirds in Australia.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					km ² , located south of Broome and adjacent to the Roebuck AMP (refer below).	The site regularly supports over 100,000 waterbirds, with numbers being highest in the austral spring when migrant species breeding in the Palearctic stop to feed during migration.
Ord River Floodplain	✓			Ramsar	The Ord River Floodplain Ramsar Site is in the East Kimberley region and encompasses an extensive system of river, seasonal creek, tidal mudflat, and floodplain wetlands. The Ramsar Site is a nursery, feeding and/or breeding ground for migratory birds, waterbirds, fish, crabs, prawns, and crocodiles.	The site represents the best example of wetlands associated with the floodplain and estuary of a tropical river system in the Tanami-Timor Sea Coast Bioregion in the Kimberley. In addition, the False Mouths of the Ord are the most extensive mudflat and tidal waterway complex in Western Australia.
Wetlands of National Importance (DAWE, 2019)						
Ashmore Reef	✓	-	-		Ashmore Reef is a shelf-edge platform reef located among the Sahul Banks of north-western Australia. It covers an area of 583 km ² and consists of three islets surrounded by intertidal reef and sand flats.	These islets are major seabird nesting sites with 20 breeding species recorded to date. The total bird population has been estimated to exceed 100,000 during the peak breeding season. The marine reserve also has the highest diversity of marine fauna of the reefs on the NWS and differs from other reefs and coastal areas in the region. The area meets criteria 1, 3, 4 and 5 for inclusion on the Directory of Important Wetlands in Australia.
Mermaid Reef	-	✓	-		Mermaid Reef Marine Park covers an area of around 540 km ² , located ~280 km west north-west of Broome, and is the most north-easterly atoll of the Rowley Shoals.	The reefs of the Mermaid Reef Marine Park have biogeographic value due to the presence of species that are at or close to the limit of their distribution. The coral communities are one of the special values of Mermaid Reef. The area meets criteria 1, 2 and 3 for inclusion on the Directory of Important Wetlands in Australia.

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	Browse	NWS/S	NW Cape			
Exmouth Gulf East	-	-	✓		Exmouth Gulf East covers an area of 800 km ² and includes wetlands in the eastern part of Exmouth Gulf, from Giralia Bay; to Urala Creek, Locker Point.	The Exmouth Gulf East is an outstanding example of tidal wetland systems of low coast of north-west Australia, with well- developed tidal creeks, extensive mangrove swamps and broad saline coastal flats. The site is one of the major population centres for dugong in WA and its seagrass beds and extensive mangroves provide nursery and feeding areas for marine fishes and crustaceans in the Gulf. The area meets criteria 1, 2 and 3 for inclusion on the Directory of Important Wetlands in Australia.
Hamelin Pool	-	-	✓		Hamelin Pool covers an area of 900 km ² in the far south-east part of Shark Bay.	Hamelin Pool is an outstanding example of a hypersaline marine embayment and supports extensive microbialite (subtidal stromatolite) formations, which are the most abundant and diverse examples of growing marine microbialites in the world. The area meets criteria 1 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Shark Bay East	-	-	✓		Shark Bay East covers a 250 km area of coastline comprising tidal wetlands, and marine waters less than 6 m deep at low tide, in the east arm of Shark Bay.	The site is an outstanding example of a very large, shallow marine embayment, with particularly extensive occurrence of seagrass beds and substantial areas of intertidal mud/sandflats and mangrove swamp. The site supports what is probably the world's largest discrete population of dugong; it is also a major nursery and/or feeding area for turtles, rays, sharks, other fishes, prawns and other marine fauna; and is a major migration stop-over area for shorebirds. The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018a)						
Abrolhos Marine Park	-	-	✓	II, IV, VI	Abrolhos Marine Park is located adjacent to the WA Houtman Abrolhos Islands, covering a large offshore	Abrolhos Marine Park is significant because it contains habitats, species and ecological communities associated with four bioregions:

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					<p>area of 88,060 km² extending from the WA State waters boundary to the edge of Australia's EEZ.</p> <p>The Abrolhos Marine Park is located within both the NWMR and SWMR.</p>	<ul style="list-style-type: none"> • Central Western Province • Central Western Shelf Province • Central Western Transition • South-west Shelf Transition <p>It includes seven KEFs: Commonwealth marine environment surrounding the Houtman Abrolhos Islands; Demersal slope and associated fish communities of the Central Western Province; Mesoscale eddies; Perth Canyon and adjacent shelf break, and other west-coast canyons; Western rock lobster; Ancient coastline at 90-120 m depth; and Wallaby Saddle.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging and breeding habitat for seabirds, foraging habitat for Australian sea lions and white sharks, and a migratory pathway for humpback and pygmy blue whales. The AMP is adjacent to the northernmost Australian sea lion breeding colony in Australia on the Houtman Abrolhos Islands.</p>
Carnarvon Canyon Marine Park	-	-	✓	IV	Carnarvon Canyon Marine Park covers an area of 6177 km ² , located ~300 km north-west of Carnarvon.	Carnarvon Canyon Marine Park is significant because it contains habitats, species and ecological communities associated with the Central Western Transition bioregion. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. There is limited information about species' use of this AMP.
Shark Bay Marine Park	-	-	✓	VI	Shark Bay Marine Park covers an area of 7443 km ² located ~60 km offshore of Carnarvon, adjacent to the Shark Bay World Heritage Property and National Heritage Place.	Shark Bay Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Central Western Shelf Province • Central Western Transition. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
						the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting habitat for marine turtles, and a migratory pathway for humpback whales.
Gascoyne Marine Park	-	-	✓	II, IV, VI	Gascoyne Marine Park covers an area of 81,766 km ² , located ~20 km off the west coast of the Cape Range Peninsula, adjacent to the Ningaloo Marine Park.	Gascoyne Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • Central Western Shelf Transition • Central Western Transition • Northwest Province. It includes four KEFs: Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula; Commonwealth waters adjacent to Ningaloo Reef; Continental slope demersal fish communities; and Exmouth Plateau. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting habitat for marine turtles, a migratory pathway for humpback whales, and foraging habitat and migratory pathway for pygmy blue whales.
Ningaloo Marine Park	-	-	✓	II, IV	Ningaloo Marine Park covers an area of 2435 km ² , stretching ~300 km along the west coast of the Cape Range Peninsula, and is adjacent to the WA Ningaloo Marine Park and Gascoyne Marine Park.	Ningaloo Marine Park is significant because it contains habitats, species and ecological communities associated with four bioregions: <ul style="list-style-type: none"> • Central Western Shelf Transition • Central Western Transition • Northwest Province • Northwest Shelf Province. It includes three KEFs: Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula; Commonwealth waters adjacent to Ningaloo Reef; and Continental slope demersal fish communities. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
						or foraging habitat for seabirds, interesting habitat for marine turtles, a migratory pathway for humpback whales, foraging habitat and migratory pathway for pygmy blue whales, breeding, calving, foraging and nursing habitat for dugong and foraging habitat for whale sharks.
Montebello Marine Park	-	✓	-	VI	Montebello Marine Park covers an area of 3413 km ² , located offshore of Barrow Island and 80 km west of Dampier extending from the WA State waters boundary, and is adjacent to the WA Barrow Island and Montebello Islands Marine Parks.	Montebello Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province bioregion. It includes one KEF: Ancient coastline at 125 m depth contour. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting, foraging, mating, and nesting habitat for marine turtles, a migratory pathway for humpback whales and foraging habitat for whale sharks.
Dampier Marine Park	-	✓	-	II, IV, VI	Dampier Marine Park covers an area of 1252 km ² , located ~10 km north-east of Cape Lambert and 40 km from Dampier extending from the WA State waters boundary.	Dampier Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province bioregion. The AMP provides protection for offshore shelf habitats adjacent to the Dampier Archipelago, and the area between Dampier and Port Hedland, and is a hotspot for sponge biodiversity. The AMP supports a range of species including those listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, interesting habitat for marine turtles and a migratory pathway for humpback whales.
Eighty Mile Beach Marine Park	-	✓	-	VI	Eighty Mile Beach Marine Park covers an area of 10,785 km ² , located ~74 km north-east of Port Hedland, adjacent to the	Eighty Mile Beach Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province and consists of shallow shelf habitats, including terrace, banks and shoals.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					WA Eighty Mile Beach Marine Park.	The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding, foraging and resting habitat for seabirds, interesting and nesting habitat for marine turtles, foraging, nursing and pupping habitat for sawfishes and a migratory pathway for humpback whales.
Argo – Rowley Terrace Marine Park	✓	✓	-	II, VI, VI (Trawl)	Argo-Rowley Terrace Marine Park covers an area of 146,003 km ² , located ~270 km north-west of Broome, and extends to the limit of Australia's EEZ. The AMP is adjacent to the Mermaid Reef Marine Park and the WA Rowley Shoals Marine Park.	Argo-Rowley Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Northwest Transition • Timor Province. It includes two KEFs: Canyons linking the Argo Abyssal Plain with the Scott Plateau; and Mermaid Reef and Commonwealth waters surrounding Rowley Shoals. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include resting and breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.
Mermaid Reef Marine Park	-	✓	-	II	Mermaid Reef Marine Park covers an area of 540 km ² , located ~280 km north-west of Broome, adjacent to the Argo-Rowley Terrace Marine Park and ~13 km from the WA Rowley Shoals Marine Park. Mermaid Reef is one of three reefs forming the Rowley Shoals. The other two are Clerke Reef and Imperieuse Reef, to the	Mermaid Reef Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Transition. It includes one KEF: Mermaid Reef and Commonwealth waters surrounding Rowley Shoals. The Rowley Shoals have been described as the best geological examples of shelf atolls in Australian waters. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					south-west of the AMP, which are included in the WA Rowley Shoals Marine Park.	
Roebuck Marine Park	-	✓	-	VI	Roebuck Marine Park covers an area of 304 km ² , located ~12 km offshore of Broome, and is adjacent to the WA Yawuru Nagulagun/Roebuck Bay Marine Park.	Roebuck Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province and consists entirely of shallow continental shelf habitat. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and resting habitat for seabirds, foraging and internesting habitat for marine turtles, a migratory pathway for humpback whales and foraging habitat for dugong.
Kimberley Marine Park	✓	✓	-	II, IV, VI	Kimberley Marine Park covers an area of 74,469 km ² , located ~100 km north of Broome, extending from the WA State waters boundary north from the Lacepede Islands to the Holothuria Banks offshore from Cape Bougainville.	Kimberley Marine Park is significant because it includes habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • Northwest Shelf Province • Northwest Shelf Transition • Timor Province. It includes two KEFs: Ancient coastline at 125 m depth contour; and Continental slope demersal fish communities. The AMP supports a range of species, including protected species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting and nesting habitat for marine turtles, breeding, calving and foraging habitat for inshore dolphins, calving, migratory pathway and nursing habitat for humpback whales, migratory pathway for pygmy blue whales, foraging habitat for dugong and foraging habitat for whale sharks.
Ashmore Reef Marine Park	✓	-	-	Ia, IV	Ashmore Reef Marine Park covers an area of 583 km ² , located ~630 km north of	Ashmore Reef Marine Park is significant because it includes habitats, species and ecological communities associated with the Timor Province. It includes two KEFs:

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					Broome and 110 km south of the Indonesian island of Roti. The AMP is located in Australia's External Territory of Ashmore and Cartier Islands and is within an area subject to a Memorandum of Understanding (MoU) between Indonesia and Australia, known as the MoU Box.	Ashmore Reef and Cartier Island and surrounding Commonwealth waters; and Continental slope demersal fish communities. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding, foraging and resting habitat for seabirds, resting and foraging habitat for migratory shorebirds, foraging, mating, nesting and internesting habitat for marine turtles, foraging habitat for dugong, and a migratory pathway for pygmy blue whales.
Cartier Island Marine Park	✓	-	-	Ia	Cartier Island Marine Park covers an area of 172 km ² , located ~45 km south-east of Ashmore Reef Marine Park and 610 km north of Broome. It is also located in Australia's External Territory of Ashmore and Cartier Islands and within an area subject to an MoU between Indonesia and Australia, known as the MoU Box.	Cartier Island Marine Park is significant because it includes habitats, species and ecological communities associated with the Timor Province. It includes two key ecological features: Ashmore Reef and Cartier Island and surrounding Commonwealth waters and continental slope demersal fish communities. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting, nesting and foraging habitat for marine turtles and foraging habitat for whale sharks. The AMP is also internationally significant for its abundance and diversity of sea snakes, some of which are listed species under the EPBC Act.
Joseph Bonaparte Gulf Marine Park	✓	-	-	VI	Joseph Bonaparte Gulf Marine Park covers an area of 8597 km ² and is located ~15 km west of Wadeye, NT, and ~90 km north of Wyndham, WA, in the Joseph Bonaparte Gulf.	Joseph Bonaparte Gulf Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Transition bioregion. It includes one KEF: Carbonate bank and terrace system of the Sahul Shelf. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					It is adjacent to the WA North Kimberley Marine Park. The Joseph Bonaparte Gulf Marine Park is located within both the NWMR and NMR.	the EPBC Act. BIAs within the AMP include foraging habitat for marine turtles and the Australian snubfin dolphin.
Oceanic Shoals Marine Park	✓	-	-	II, IV, VI	Oceanic Shoals Marine Park covers an area of 71,743 km ² and is located west of the Tiwi Islands, ~155 km north-west of Darwin, NT and 305 km north of Wyndham, WA. The Oceanic Shoals Marine Park is located within both the NWMR and NMR.	Oceanic Shoals Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Transition bioregion. It contains four KEFs: Carbonate bank and terrace systems of the Van Diemen Rise; Carbonate bank and terrace systems of the Sahul Shelf; Pinnacles of the Bonaparte Basin; and Shelf break and slope of the Arafura Shelf. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging and interesting habitat for marine turtles.
State Marine Parks and Reserves						
North Kimberley Marine Park	✓	-	-	Sanctuary, Special Purpose and General Use Zones	The North Kimberley Marine Park covers approx. 18,450 km ² with its south-western boundary located ~270 km north-east of Derby.	The coral reefs of the north Kimberley have the greatest diversity in Western Australia and are some of the most pristine and remarkable reefs in the world. The park surrounds more than 1000 islands and is home to listed species such as dugongs, marine turtles, and sawfishes (DPAW, 2016a).
Lalang-garram / Horizontal Falls Marine Park and North Lalang-garram Marine Park (jointly managed)	✓	-	-	Sanctuary, Special Purpose and General Use Zones	The Lalang-garram / Horizontal Falls Marine Park covers ~3530 km ² from Talbot Bay in the west and Glenelg River in the east. The North Lalang-garram Marine Park covers ~1100	The Lalang-garram / Horizontal Falls Marine Park's most celebrated attraction is created by massive tides of up to 10 m and narrow gaps in two parallel tongues of land meaning the tide falls faster than the water can escape, producing 'horizontal falls'. There are also islands with fringing coral reefs and mangrove-lined creeks and bays. The North Lalang-garram Marine Park has a number of islands fringed with coral reef and has been identified as an

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					km ² between Camden Sound and North Kimberley Marine Parks.	ecological hotspot and supports more than 1% of the world's population of brown boobies, with up to 2000 breeding pairs. About 500 pairs of crested terns also nest on the island (DPAW, 2016b).
Lalang-garram / Camden Sound Marine Park	✓	-	-	Sanctuary, Special Purpose and General Use Zones	Lalang-garram / Camden Sound Marine Park covers 7050 km ² located about 150 km north of Derby.	The Lalang-garram / Camden Sound Marine Park is the most important humpback whale nursery in the Southern Hemisphere. It also features the spectacular coastal Montgomery Reef. The marine park is home to six species of threatened marine turtle. Australian snubfin and Indo-Pacific humpback dolphins, dugongs, saltwater crocodiles, and several species of sawfish (DPAW, 2013).
Rowley Shoals Marine Park	-	✓	-	Sanctuary, Recreation and General Use Zones	The Rowley Shoals comprise of three reef systems, Mermaid Reef, Clerke Reef and Imperieuse Reef, all 30-40 km apart. These reef systems are located ~300 km west north-west of Broome.	The three coral atolls of the Rowley Shoals Marine Park comprise of shallow lagoons inhabited by diverse corals and abundant marine life, each covering around 80 km ² at the edge of Australia's continental shelf. Further offshore, the seafloor slopes away to the abyssal plain, some 6000 m below. Undersea canyons slice the slope; these features are commonly associated with diverse communities of deep-water corals and sponges and create localised upwellings that aggregate pelagic species like tunas and billfish (DEC, 2007a).
Yawuru Nagulagun / Roebuck Bay Marine Park	-	✓	-	Special Purpose Zone	Yawuru Nagulagun / Roebuck Bay Marine Park is a series of intertidal flats lying on the coast to the south-east of Broome.	Roebuck Bay is an internationally significant wetland and one of the most important feeding grounds for migratory shorebirds in Australia. Australian snubfin and Australian humpback dolphins frequent the waters and humpback whales pass through on their annual migration. Flatback turtles nest on the shores and are found in the bay's waters with other sea turtle species. Seagrass and macroalgae communities provide food for protected species such as the dugong and flatback turtle (DPAW, 2016c).
Eighty Mile Beach Marine Park	-	✓	-	Sanctuary, Recreation, Special	Eighty Mile Beach Marine Park covers ~2000 km ² stretching across 220km of	Eighty Mile Beach Marine Park is one of the world's most important feeding grounds for small wading birds that migrate to the area each summer, travelling from countries

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	Browse	NWS/S	NW Cape			
				Purpose and General Use Zones	coastline between Port Hedland and Broome.	thousands of kilometres away. The marine park is a major nesting area for flatback turtles which are found only in northern Australia. Sawfishes, dugongs, dolphins and millions of invertebrates inhabit the sand and mud flats, seagrass meadows, coral reefs and mangroves (DPAW, 2014).
Montebello Islands Marine Park, Barrow Island Marine Park and Barrow Island Marine Management Area (jointly managed)	-	✓	-	Sanctuary, Recreation, General Use and Special Purpose Zones	The Montebello Islands Marine Park, Barrow Island Marine Park and Barrow Island Marine Management Area are located off the north-west coast of WA, ~1600 km north of Perth, and cover areas of ~583 km ² , 42 km ² and 1,147 km ² , respectively.	The Montebello/Barrow islands marine conservation reserves have very complex seabed and island topography, resulting in a myriad of different habitats subtidal coral reefs, macroalgal and seagrass communities, subtidal soft-bottom communities, rocky shores and intertidal reef platforms, which support a rich diversity of invertebrates and finfish. The reserves are important breeding areas for several species of marine turtles and seabirds, which use the undisturbed sandy beaches for nesting. Humpback whales migrate through the reserves and dugongs occur in the shallow warm waters (DEC, 2007b).
Ningaloo Marine Park and Muiron Islands Marine Management Area (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	The Ningaloo Marine Park and Muiron Islands Marine Management Area are located off the North-west Cape of WA, ~1200 km north of Perth, and cover areas of ~2633 km ² and 286 km ² , respectively.	Ningaloo Reef is the largest fringing coral reef in Australia. Temperate and tropical currents converge in the Ningaloo region resulting in highly diverse marine life including spectacular coral reefs, abundant fishes and species with special conservation significance such as turtles, whale sharks, dugongs, whales and dolphins. The region has diverse marine communities including mangroves, algae and filter-feeding communities and has high water quality. These values contribute to the Ningaloo Marine Park being regarded as the State's premier marine conservation icon. The Muiron Islands Marine Management Area is also important, containing a very diverse marine environment, with coral reefs, filter-feeding communities and macroalgal beds. In addition, the Islands are important seabird and green turtle nesting areas. (CALM, 2005a).

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Shark Bay Marine Park and Hamelin Pool Marine Nature Reserve (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	The Shark Bay Marine Park and Hamelin Pool Marine Nature Reserves are located 400 km north of Geraldton, covering areas of ~7487 km ² and 1270 km ² , respectively.	Seagrass covers over 4000 km ² of the Shark Bay Marine Park, with 12 different species making it one of the most diverse seagrass assemblages in the world. Dugongs regularly use this habitat, with the bay containing one of the largest dugong populations in the world. Humpback whales also use the bay as a staging post in their migration along the coast. Green and loggerhead turtles occur in the bay with Dirk Hartog Island providing the most important nesting site for loggerheads in Western Australia. Hamelin Pool contains the most diverse and abundant examples of stromatolites found in the world. These are living representatives of stromatolites that existed some 3500 million years ago (CALM, 1996).

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: national Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

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

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

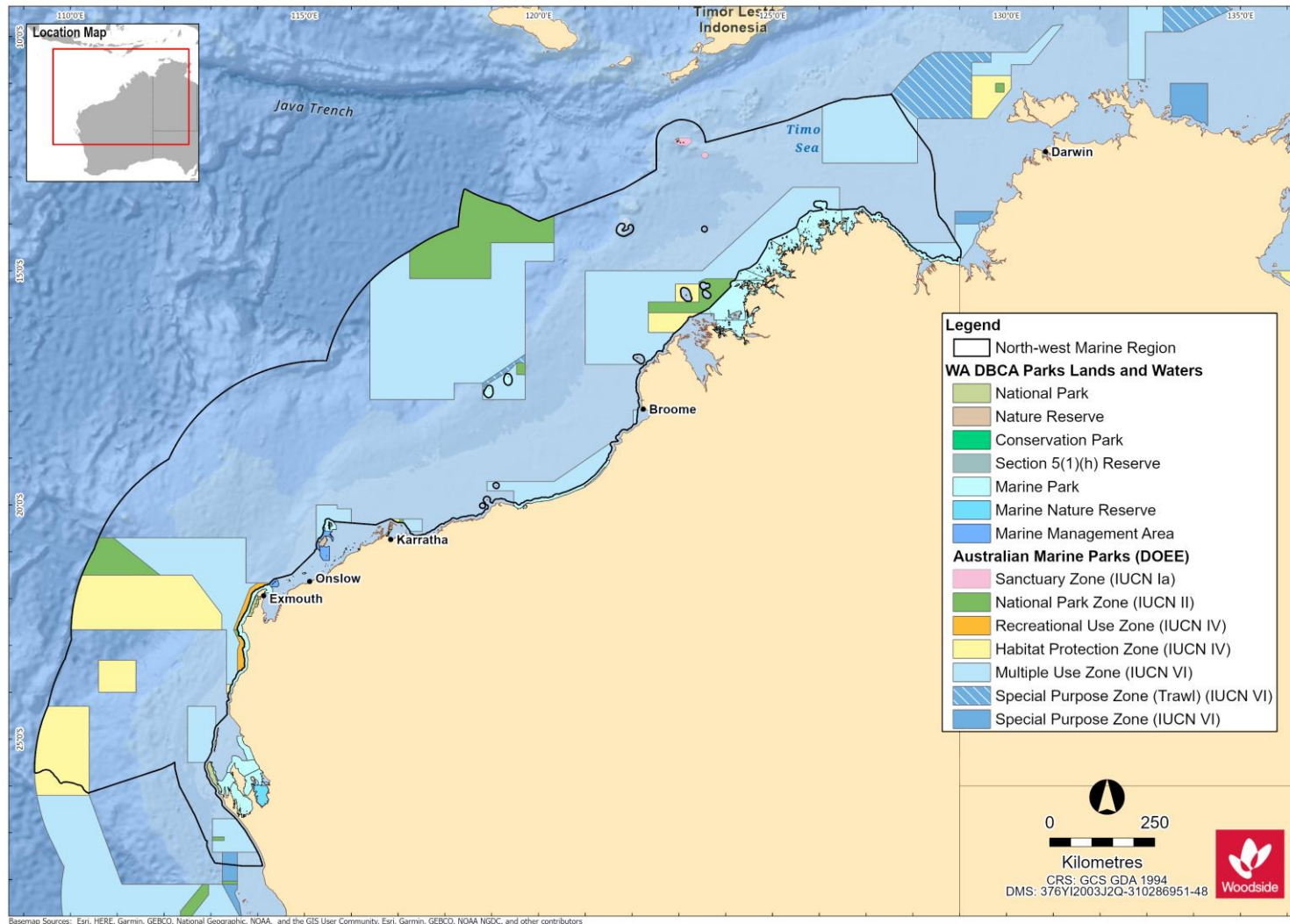


Figure 10-1 Commonwealth and State Marine Protected Areas for the NWMR

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10.10 Summary of Protected Areas within the SWMR

Table 10-2 Protected Areas within the SWMR

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
World Heritage Properties			
N/A			
National Heritage Places - Natural			
N/A			
Commonwealth Heritage Places - Natural			
N/A			
Wetlands of International Importance (Ramsar)			
Beecher Point Wetlands	Ramsar	Beecher Point Wetlands is a system of about sixty small wetlands located near Rockingham in south-west WA, covering an area of around 7 km ² . The site was listed under the Ramsar Convention in 2001.	The wetlands support sedgeland, herbland, grassland, open-shrubland and low open-forest. The sedgelands that occur within the linear wetland depressions of the Ramsar site are a nationally listed TEC. At least four species of amphibians and twenty-one (21) species of reptiles have been recorded on the site. The site also supports the southern brown bandicoot. The site meets criteria 1 and 2 of the Ramsar Convention.
Forrestdale and Thomsons Lakes	Ramsar	Forrestdale Lake is located in the City of Armadale and Thomsons Lake is located in the City of Cockburn both of which lie within the southern Perth metropolitan area, in Western Australia. The site was listed under the Ramsar Convention in 1990.	The lakes are surrounded by medium density urban development and some agricultural land. The sediments of Thomsons Lake are between 30,000 and 40,000 years old, which are the oldest lake sediments discovered in WA to date. These lakes are the best remaining examples of brackish, seasonal lakes with extensive fringing sedgeland, typical of the Swan Coastal Plain. The site meets criteria 1, 3, 5 and 6 of the Ramsar Convention.
Peel-Yalgorup System	Ramsar	Peel-Yalgorup System, located adjacent to the City of Mandurah in	Peel-Yalgorup System Ramsar site is the most important area for waterbirds in south-western Australia. It supports a large number of waterbirds, and a

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		WA, is a large and diverse system of shallow estuaries, coastal saline lakes and freshwater marshes. The site was listed under the Ramsar Convention in 1990.	wide variety of waterbird species. It also supports a wide variety of invertebrates, and estuarine and marine fish. The site meets criteria 1, 3, 5 and 6 of the Ramsar Convention.
Vasse-wonnerup system	Ramsar	Vasse-Wonnerup System Ramsar wetland is situated in the Perth Basin, south-western WA. The site was listed under the Ramsar Convention in 1990.	Vasse-Wonnerup System is an extensive, shallow, nutrient-enriched wetland system of highly varied salinities. Large areas of the wetland dry out in late summer. Vasse-Wonnerup System supports tens of thousands of resident and migrant waterbirds of a wide variety of species. More than 80 species of waterbird have been recorded in the System such as red-necked avocets and black-winged stilts, wood sandpiper, sharp-tailed sandpiper, long-toed stint, curlew sandpiper and common greenshank. Thirteen waterbird species are also known to breed at the Ramsar site, including the largest regular breeding colony of black swans in south-western Australia. The site meets criteria 5 and 6 of the Ramsar Convention.
Wetlands of National Importance (DAWE, 2019)			
Rottneest Island Lakes		The Rottneest Island Lakes site is the cluster of 18 lakes and swamps on the north-east part of Rottneest Island.	An outstanding example of a series of lakes/swamps of varied depth and salinity located on an offshore island; the only island among 200 plus in WA exceeding 10 ha in area, that has a salt-lake complex; the only known example of seasonally meromictic lakes in Australia. The area meets criteria 1, 2, 3 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018b)			
Abrolhos Marine Park	II, IV, VI	The Abrolhos Marine Park is located within both the NWMR and SWMR. Refer Table 10-1 for description and conservation values.	
Bremer Marine Park	II, VI	Bremer Marine Park covers an area of 4472 km ² and is located approximately half-way between Albany and Esperance, offshore from the Fitzgerald River National Park, extending from the WA State waters boundary.	Bremer Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Southern Province • South-west Shelf Province. It includes two KEFs: Albany Canyon group and adjacent shelf break; and Ancient coastline at 90-120 m depth.

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, and white sharks, a migratory pathway for humpback whales, and a significant calving area for southern right whales. The AMP includes canyons—important aggregation areas for killer whales.
Eastern Recherche Marine Park	II, VI	Eastern Recherche Marine Park covers an area of 20,575 km ² and is located ~135 km east of Esperance, adjacent to the Recherche Archipelago, close to the WA Cape Arid National Park.	Eastern Recherche Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • South-west Shelf Province • Southern Province • Great Australian Bight Shelf Transition. It includes three KEFs: Mesoscale eddies; Ancient coastline at 90-120 m depth; and Commonwealth marine environment surrounding the Recherche Archipelago. <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a calving buffer area for southern right whales.</p>
Geographe Marine Park	II, IV, VI	Geographe Marine Park covers an area of 977 km ² and is located in Geographe Bay, ~8 km west of Bunbury and 8 km north of Busselton, adjacent to the WA Ngari Capes Marine Park.	Geographe Marine Park is significant because it contains habitats, species and ecological communities associated with the South-west Shelf Province bioregion. <p>It includes two KEFs: Commonwealth marine environment within and adjacent to Geographe Bay; and Western rock lobster.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, a migratory pathway for humpback and pygmy blue whales, and a calving buffer area for southern right whales.</p>
Great Australian Bight Marine Park	II, VI	Great Australian Bight Marine Park covers an area of 45,822 km ² and is located ~12 km south-east of Eucla and 174 km west of Ceduna, adjacent to the SA Far West Coast and Nuyts Archipelago Marine Parks.	Great Australian Bight Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Great Australian Bight Shelf Transition • Southern Province. <p>It includes three KEFs: Ancient coastline at 90-120 m depth; Benthic invertebrate communities of the eastern Great Australian Bight; and Small pelagic fish of the South-west Marine Region.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, white sharks and</p>

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			pygmy blue and sperm whales, and a calving area, migratory pathway and large aggregation area for southern right whales.
Jurien Marine Park	II, VI	Jurien Marine Park covers an area of 1851 km ² and is located ~148 km north of Perth and 155 km south of Geraldton, adjacent to the WA Jurien Bay Marine Park.	<p>Jurien Marine Park is significant because it includes habitats, species and ecological communities associated with two bioregions:</p> <ul style="list-style-type: none"> • South-west Shelf Transition • Central Western Province. <p>It includes three KEFs: Ancient coastline at 90-120 m depth; Demersal slope and associated fish communities of the Central Western Province; and Western rock lobster</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a migratory pathway for humpback and pygmy blue whales.</p>
Perth Canyon Marine Park	II, IV, VI	Perth Canyon Marine Park covers an area of 7409 km ² and is located ~52 km west of Perth and ~19 km west of Rottnest Island.	<p>Perth Canyon Marine Park is significant because it includes habitats, species and ecological communities associated with four bioregions:</p> <ul style="list-style-type: none"> • Central Western Province • South-west Shelf Province • Southwest Transition • South-west Shelf Transition. <p>It includes four KEFs: Perth Canyon and adjacent shelf break, and other west-coast canyons; Demersal slope and associated fish communities of the Central Western Province; Western rock lobster; and Mesoscale eddies.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Antarctic blue, pygmy blue and sperm whales, a migratory pathway for humpback, Antarctic blue and pygmy blue whales, and a calving buffer area for southern right whales.</p>
South-west Corner Marine Park	II, IV, VI	South-west Corner Marine Park covers an area of 271,833 km ² and is located adjacent to the WA Ngari Capes Marine Park. It covers an extensive offshore area that is closest to WA State waters ~48 km west of Esperance, 73 km west of Albany and 68 km west of Bunbury.	<p>South-west Corner Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions:</p> <ul style="list-style-type: none"> • Southern Province • South-west Transition • South-west Shelf Province. <p>It includes six KEFs: Albany Canyon group and adjacent shelf break; Cape Mentelle upwelling; Diamantina Fracture Zone; Naturaliste Plateau; Western rock lobster; and Ancient coastline at 90 m-120 m depth.</p>

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, white sharks and sperm whales, a migratory pathway for Antarctic blue, pygmy blue and humpback whales, and a calving buffer area for southern right whales.
Twilight Marine Park	II, VI	Twilight Marine Park covers an area of 4641 km ² and is located ~245 km south-west of Eucla and 373 km north-east of Esperance, adjacent to the WA State waters boundary.	Twilight Marine Park is significant because it contains habitats, species and ecological communities associated with the Great Australian Bight Shelf Transition bioregion. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a calving buffer area for southern right whales.
Two Rocks Marine Park	II, VI	Two Rocks Marine Park covers an area of 882 km ² and is located ~25 km north-west of Perth, to the north-west of the WA Marmion Marine Park.	Two Rocks Marine Park is significant because it includes habitats, species and ecological communities associated with the South-west Shelf Transition bioregion. It includes three KEFs: Commonwealth marine environment within and adjacent to the west-coast inshore lagoons; Western rock lobster; and Ancient coastline at 90-120 m depth. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds and Australian sea lions, a migratory pathway for humpback and pygmy blue whales, and a calving buffer area for southern right whales.
State Marine Parks and Reserves			
Jurien Bay Marine Park	Sanctuary, Special Purpose and General Use Zones.	The Jurien Bay Marine Park is located on the central west coast of WA ~200 km north of Perth and covers an area of 824 km ² .	An extensive limestone reef system parallel to the shore has created a huge shallow lagoon that provides perfect habitat for Australian sea lions, dolphins and a myriad of juvenile fish. Extensive seagrass meadows inside the reef shelter many marine animals such as western rock lobsters, octopus and cuttlefish that make up the diet of young sea lions. The marine park also surrounds dozens of ecologically important islands that contain rare and endangered animals found nowhere else in the world (CALM, 2005b).
Marmion Marine Park	Sanctuary, Recreation and Special Use Zones.	The Marmion Marine Park lies within State waters between Trigg Island and Burns Beach and encompasses a coastal area of ~95 km ² . Marmion	The marine park has a number of sanctuary zones including Little Island, The Lumps and the Boyinaboat Reef protecting a variety of habitats from limestone reefs, seagrass beds and clear shallow lagoons that support a diversity of marine life. In addition, to a general use zone and the Waterman Recreation Area. The marine park contains important habitat for the endemic Australian

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		Marine Park was the State's first marine park, declared in 1987.	sea lion, an array of seabird species migratory whales are regular visitors (CALM, 1992; DPAW, 2016d).
Swan Estuary Marine Park	Special Purpose and Nature Reserve Zones.	Three biologically important areas of Perth's Swan River make up the Swan Estuary Marine Park, including Alfred Cove, Pelican Point and Crawley. These three sites cover a total area of 3.4 km ² .	The sand flats, mud flats and beaches at the three locations of the Swan Estuary Marine Park provide the only remaining significant feeding and resting areas in the Swan Estuary, for trans-equatorial migratory wading and waterbirds. The Park and adjacent reserves also provide habitat for a diverse assemblage of aquatic and terrestrial flora and fauna (CALM, 1999).
Shoalwater Islands Marine Park	Sanctuary, Special Purpose and General Use Zones.	The Shoalwater Islands Marine Park is located adjacent to Rockingham on the south-west coast of WA, ~50 km south of Perth and covers an area of ~66 km ² .	The Shoalwater Islands Marine Park consists of a complex seabed and coastal topography consisting of islands, limestone ridges and reef platforms, protected inshore areas and deeper basins, sandbars and beaches, and is home to five species of cetacean and 14 species of sea and shore bird. The waters of the marine park are also used to access feeding grounds for the little penguin (<i>Eudyptula minor</i>) colony on Penguin Island, which is close to the northernmost limit of the species' range and is the largest known breeding colony in Western Australia (DEC, 2007c).
Ngari Capes Marine Park	Sanctuary, Special Purpose and Recreation Zones.	The Ngari Capes Marine Park is located off the south-west coast of WA, ~250 km south of Perth, covering ~1238 km ² .	The Ngari Capes Marine Park consists of a complex arrangement of sandy bays, high energy limestone and granite reefs bordered by headlands and cliffs and two weathered capes. Coral communities consist of both tropical and temperate species. Cetaceans and pinnipeds are resident in and/or transient through the marine park as well as a diverse range of seabirds and shorebirds (DEC, 2013).
Walpole and Nornalup Inlets Marine Park	Recreation Zone.	The Walpole and Nornalup Inlets Marine Park is located adjacent to the towns of Walpole and Nornalup on the south coast of WA, ~120 km west of Albany, and covers ~14 km ² .	The Walpole and Nornalup Inlets Marine Park consists of a geologically complex lagoonal estuarine system comprising three significant rivers and two connected inlets that are permanently open to the ocean. Approximately 40 marine and estuarine finfish species commonly inhabit the inlet system, as well as a variety of shark and ray species and numerous seabirds and shorebirds. The sandy beaches and shoreline vegetation of the inlet system are of high ecological and social importance to the marine park (DEC, 2009).

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: national Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

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

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

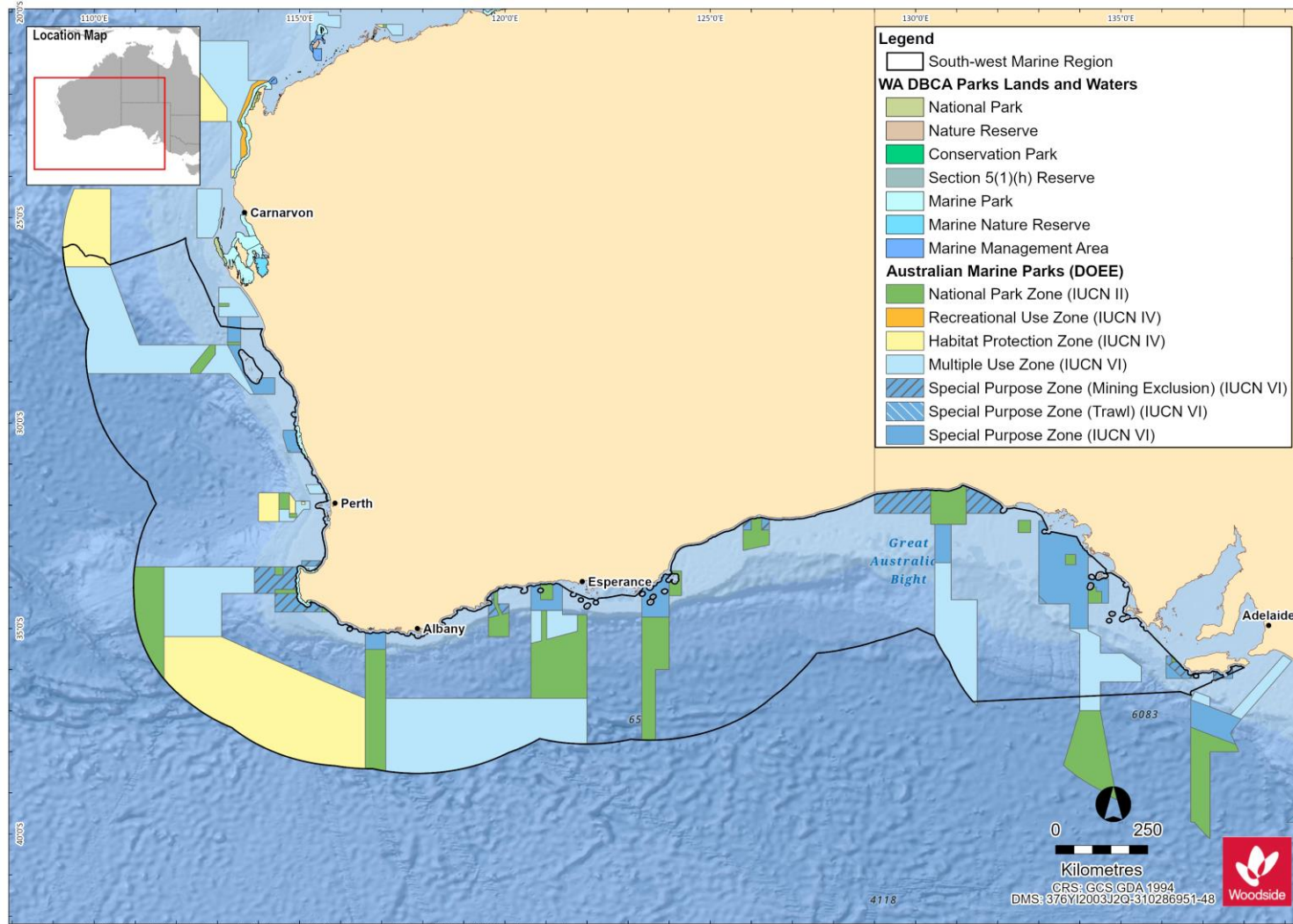


Figure 10-2. Commonwealth and State Marine Protected Areas for the SWMR

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
Cobourg Peninsula		Australian Ramsar site number 1 established in 1974. This Ramsar site includes freshwater and extensive intertidal areas but excludes subtidal areas. It is in a remote location and there has been minimal human impact on the site.	The wetlands encompassed in the Ramsar site are some of the better protected and near-natural wetlands in the bioregion and there is a diverse array of wetland in a confined area. The site supports important turtle nesting habitat and habitat for coastal dolphin species and is an internationally significant migratory shorebird habitat as part of the EAAF and an important location for seabird breeding colonies.
Wetlands of National Importance (DAWE, 2019)			
Southern Gulf Aggregation		The site is a complex continuous wetland aggregation in the Gulf of Carpentaria, covering an area of ~5460 km ² located 58 km east of Burketown, Queensland.	The Southern Gulf Aggregation is the largest continuous estuarine wetland aggregation of its type in northern Australia. It is one of the three most important areas for shorebirds in Australia. The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018c)			
Arafura Marine Park	VI	Arafura Marine Park covers an area of 22,924 km ² is located ~256 km north-east of Darwin and 8 km offshore of Croker Island, NT. It extends from NT waters to the limit of Australia's EEZ.	The AMP is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> •Northern Shelf Province •Timor Transition. It includes one KEF: Tributary canyons of the Arafura Depression. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include interesting habitat for marine turtles and important foraging and breeding habitat for seabirds.
Arnhem Marine Park	VI	Arnhem Marine Park covers an area of 7125 km ² and is located ~100 km south-east of Croker Island and 60 km south-east of the Arafura Marine Park. It extends from NT waters surrounding the Goulburn Islands, to the waters north of Maningrida.	Arnhem Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf Province bioregion. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat and a migratory pathway for marine turtles and seabirds.
Gulf of Carpentaria Marine Park	II, VI	Gulf of Carpentaria Marine Park covers an area of 23,771 km ² and is located ~90 km north-west of Karumba, Queensland and is adjacent to the Wellesley Islands in	Gulf of Carpentaria Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf Province bioregion.

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		the south of the Gulf of Carpentaria basin.	It includes four KEFs: Gulf of Carpentaria basin; Gulf of Carpentaria coastal zone; Plateaux and saddle north-west of the Wellesley Islands; and Submerged coral reefs of the Gulf of Carpentaria. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging areas for seabirds and interesting and foraging areas for turtles.
Joseph Bonaparte Gulf Marine Park	VI	The Joseph Bonaparte Gulf Marine Park is located within both the NWMR and NMR. Refer Table 10-1 for description and conservation values.	
Limmen Marine Park	IV	Limmen Marine Park covers an area of 1399 km ² and is located ~315 km south-west of Nhulunbuy, NT, in the south-west of the Gulf of Carpentaria. It extends from NT waters, between the Sir Edward Pellew Group of Islands and Maria Island in the Limmen Bight, adjacent to the NT Limmen Bight Marine Park.	Limmen Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf bioregion. It includes one KEF: Gulf of Carpentaria coastal zone. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include interesting and foraging habitat for marine turtles.
Oceanic Shoals Marine Park	II, IV, VI	The Oceanic Shoals Marine Park is located within both the NWMR and NMR. Refer Table 10-1 for description and conservation values.	
Wessel Marine Park	IV, VI	Wessel Marine Park covers an area of 5908 km ² and is located ~22 km east of Nhulunbuy, NT. It extends from NT waters adjacent to the tip of the Wessel Islands to NT waters adjacent to Cape Arnhem.	Wessel Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf bioregion. It includes one KEF: Gulf of Carpentaria basin. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds and interesting and foraging habitat for marine turtles.
West Cape York Marine Park	II, IV, VI	West Cape York Marine Park covers an area of 16,012 km ² and is located adjacent to the northern end	West Cape York Marine Park is significant because it contains species and ecological communities associated with two bioregions: • Northeast Shelf Transition

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		of Cape York Peninsula ~25 km south-west of Thursday Island and 40 km north-west of Weipa, Queensland.	<ul style="list-style-type: none"> Northern Shelf Province. It includes two KEFs: Gulf of Carpentaria basin; and Gulf of Carpentaria coastal zone. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting and foraging habitat for marine turtles and dugong, and foraging, breeding and calving habitat for dolphins.
Territory Marine Parks and Reserves			
Cobourg Marine Park	II, IV, VI	Cobourg Marine Park covers an area of 2,290 km ² and is located in the waters surrounding the Cobourg Peninsula ~220 km north-east of Darwin. The Marine Park is part of the larger Garig Gunak Barlu National Park. Garig Gunak Barlu National Park includes both the Marine Park and the Cobourg Sanctuary.	Cobourg Marine Park is located in the Cobourg and Van Diemen Gulf marine bioregions with the northern portion of the Park covered by the Cobourg marine bioregion and the southern portion covered by the Van Diemen Gulf marine bioregion. The Marine Park is characterised by a number of deeply incised bays and estuaries on its northern shores. These bays are ancient river valleys that were drowned during periods of sea level rise and provide a varied environment and habitat that is quite distinct from the open water areas of the Park. The areas of the Park that have been studied and where extensive collections have been made indicates that the Park supports rich and diverse marine life including live coral reefs, seagrass, diverse reef and pelagic fish populations, marine turtles and dugong.

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: National Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

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

IUCN categories for the marine park are provided and, in brackets, the IUCN categories for specific zones within each Marine Park as assigned under the North Marine Parks Network Management Plan 2018 (DNP, 2018c)

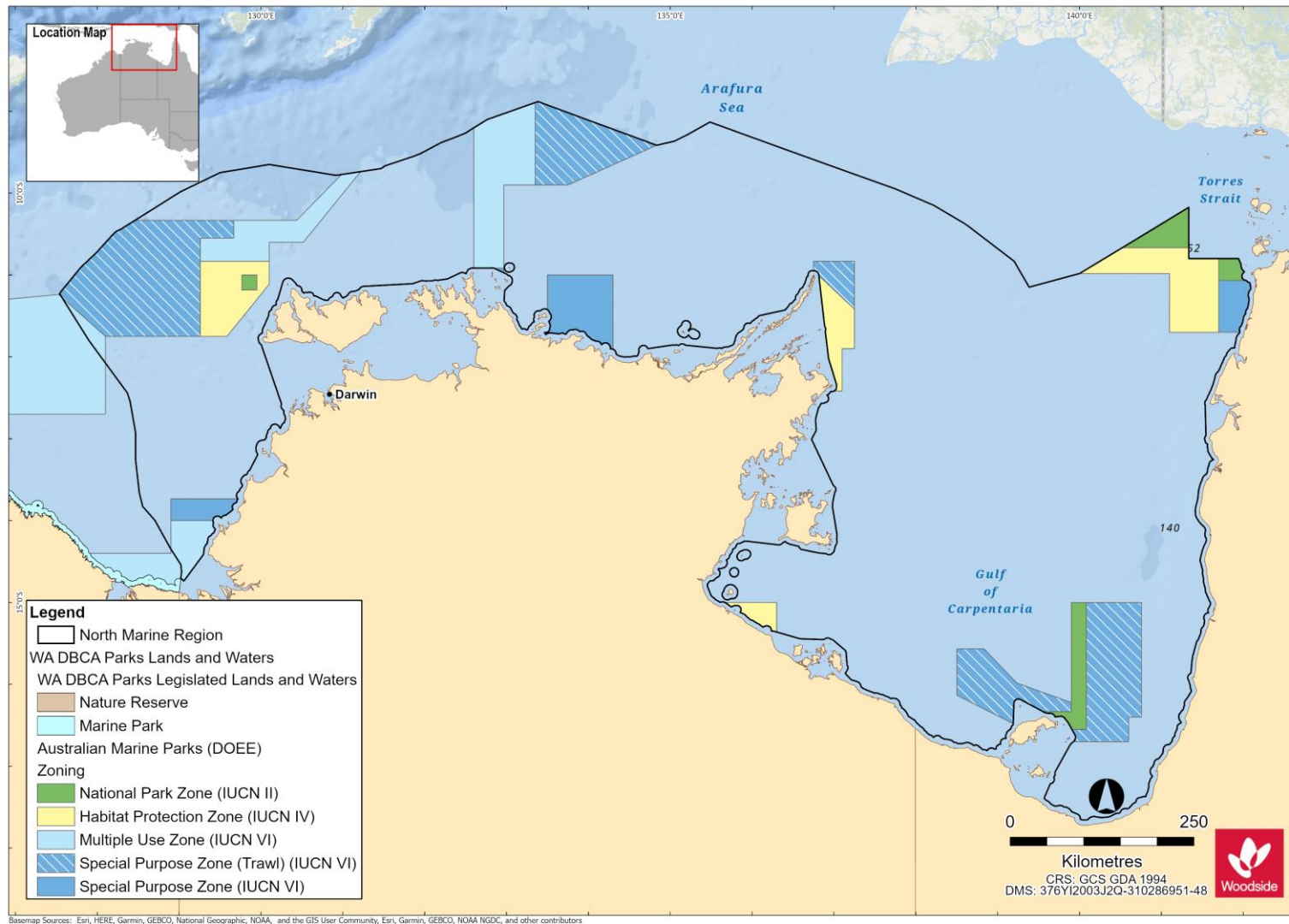


Figure 10-3. Commonwealth and State Marine Protected Areas within the NMR

11. SOCIO-ECONOMIC AND CULTURAL ENVIRONMENT

This section summarises the information relating to the socio-economic and cultural environment of the regions offshore Western Australia, with a focus on the NWMR and to a lesser extent the SWMR and NWR.

The cultural environment includes Indigenous and European heritage values, including underwater values such as historic shipwrecks. Socio-economic values include commercial and traditional fishing, tourism and recreation, shipping, oil and gas activities and defence activities.

11.1 Cultural Heritage

11.1.1 Indigenous Sites of Significance

Murujuga (the Burrup Peninsula) has a very high density of significant Indigenous heritage sites and places with tangible and intangible heritage values. The area has one of the largest, densest, and most diverse collections of rock art in the world. It is estimated that the peninsula and surrounding islands contain over a million petroglyphs (rock engravings) covering a broad range of styles and subjects. The landscape also contains quarries, middens, fish traps, rock shelters, ceremonial sites, artefact scatters, grinding patches and stone arrangements that evidence tens of thousands of years of human occupation. These places are linked to Aboriginal cosmology, Dreaming stories and songs through the stories, knowledge and customs that are still held by traditional custodians.

In 2007 the Dampier Archipelago (including the Burrup Peninsula) was included on the National Heritage List due to outstanding heritage values relating to Australia's cultural history contained in the large number, density, diversity, distribution and fine execution of rock art. Within the National Heritage Place, the Murujuga National Park covers 4913 ha and is co-managed by the Murujuga Aboriginal Corporation and the Department of Biodiversity, Conservation and Attractions. The Murujuga Cultural Landscape was also added to Australia's Tentative World Heritage List in 2020, with full World Heritage Listing anticipated in 2024.

Woodside also recognises the potential for heritage to survive in submerged landscapes. Sea-level rises since the last ice age mean that areas now under the sea were once exposed, that many of today's islands would have been connected to the mainland, and that Aboriginal people are highly likely to have inhabited these places. Woodside works with traditional custodians, academics and heritage professionals to identify tangible and intangible heritage values in the submerged landscape to avoid disturbing heritage where possible and to minimise impacts where heritage cannot be avoided.

It is an offence to excavate, destroy, damage, conceal or alter Indigenous heritage onshore or in state waters under section 17 of the *Aboriginal Heritage Act 1972 (WA) (AHA)* without ministerial authorisation. Where there is a risk of injury or desecration to a significant Aboriginal area, even where permitted under the AHA, any Aboriginal person may apply to the federal Environment Minister for a declaration under sections 9 or 10 of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)* for the protection and preservation of that area.

The Department of Planning, Lands and Heritage maintains a register of registered sites and heritage places including middens, burial, ceremonial [sites], artefacts, rock shelters, mythological [sites] and engraving sites. There are over 1600 registered sites on Murujuga and the Dampier Archipelago with around 1100 other heritage places. This register is not comprehensive and will be complemented by heritage surveys where necessary. Protection of National and World Heritage values is also legislated through various provisions of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*. Murujuga National Park is managed under the *Conservation and Land Management Act 1984 (WA)*.

11.1.2 European Sites of Significance

European sites of significance and heritage value are found along adjacent foreshores of the SWMR, NWMR and NWR. Heritage values are protected in Western Australia under the *Heritage Act 2018*.

11.1.3 Underwater Cultural Heritage

Places of historic cultural significance are protected under Commonwealth, State and local regimes. Places inscribed on the National or World Heritage list are protected through various provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). Historic places may also be protected under the *Heritage Act 2018* (WA); under section 129 the prohibited alteration, demolition, damage, despoilment or removal of objects from a registered place may result in a fine of A\$1 million. Protection of heritage by local government typically emanates from local planning schemes produced under Part 5 of the *Planning and Development Act 2005* (WA).

The remains of vessels and aircraft in Commonwealth waters, along with any associated article, are automatically protected under the *Underwater Cultural Heritage Act 2018* (Cth) after 75 years. Remains and relics of any ship lost, wrecked or abandoned in Western Australian waters before 1900 are protected by the *Maritime Archaeology Act 1973* (WA).

The Australian National Shipwreck Database and the WA Maritime Museum Shipwreck Database list these protected wrecks.

11.1.4 National and Commonwealth Listed Heritage Places

Australia's National Heritage Sites are those of outstanding natural, historic and/or Indigenous significance to Australia. National Heritage places classed as natural are discussed in **Section 10.3**. Historic and/or Indigenous National Heritage Listed Places of the NWMR include:

- Dampier Archipelago (including Burrup Peninsula)
- Dirk Hartog Landing Site/Cape Inscription
- HMAS Sydney II and the HSK Kormoran Shipwreck Sites
- Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos

Commonwealth Heritage Places are a collection of sites recognised for their Indigenous, historical and/or natural values, which are owned or controlled by the Australian Government. A number of these sites are owned or controlled by the Department of Defence, as well as Government agencies relating to maritime safety, customs and communication. Commonwealth Heritage places classed as natural are discussed in **Section 10.3**. Listed Heritage Places in the NWMR include:

- Mermaid Reef – Rowley Shoals (refer **Section 10.3**)
- Ashmore Reef National Nature Reserve (refer **Section 10.3**)
- Scott Reef and Surrounds – Commonwealth Area (refer **Section 10.3**)
- Ningaloo Marine Area (refer **Section 10.3**)

World Heritage Properties are those sites that hold universal value which transcends any value they may be held by any one nation. These sites and their qualities are detailed in the Convention concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention), to which Australia is a founding member. The Protected Matters Search Report (**Appendix A**) lists two natural World Heritage Properties in the NWMR (refer **Section 10.2**). There are no cultural heritage listings located within the NWMR.

Summary tables of heritage places for NWMR, SWMR and NMR are presented in **Table 11-1, Table 11-2** and **Table 11-3**.

11.2 Summary of Heritage Places within the NWMR

Table 11-1 Heritage Places (Indigenous and Historic) within the NWMR

Heritage Places	Woodside Activity Area			Class	Description	Conservation Values
	Browse	NWS/S	NW Cape			
National Heritage Properties						
Dampier Archipelago (including Burrup Peninsula)	-	✓	-	Indigenous	The Dampier Archipelago (including the Burrup Peninsula) contains one of the densest concentrations of rock engravings in Australia with some sites containing thousands or tens of thousands of images.	The rock engravings comprise images of avian, marine and terrestrial fauna, schematised human figures, figures with mixed human and animal characteristics and geometric designs. At a national level it has an exceptionally diverse and dynamic range of schematised human figures some of which are arranged in complex scenes. The fine execution and dynamic nature of the engravings, particularly some of the composite panels, exhibit a degree of creativity that is unusual in Australian rock engravings.
Dirk Hartog Landing Site 1616 – Cape Inscription Area	-	-	✓	Historic	Cape Inscription is the site of the oldest known landings of Europeans on the WA coastline.	The Cape Inscription area displays uncommon aspects of Australia's cultural history because of the cumulative effect its association with these explorers and surveyors had on growing knowledge of the great southern continent in Europe. The association of the site with these early navigators stimulated the development of the European view of the great southern continent at a time when they began to look at the world with a modern scientific outlook.
Commonwealth Heritage Properties						
N/A						

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11.3 Summary of Heritage Places within the NMR

Table 11-2 Heritage Places (Indigenous and Historic) within the NMR

Heritage Places	Class	Description	Conservation Values
National Heritage Properties			
None			
Commonwealth Heritage Properties			
None			

11.4 Summary of Heritage Places within the SWMR

Table 11-3 Heritage Places (Indigenous and Historic) within the SWMR

Heritage Places	Class	Description	Conservation Values
National Heritage Properties			
Cheetup Rock Shelter	Indigenous	Cheetup meaning “place of the birds” is the name of a spacious rock shelter located in Cape Le Grand National Park, about 55 km east of Esperance in WA. Aboriginal people associated with the place identify themselves as Nyungar/Noongar, Ngadju (shortened from Ngadjunmaia) or Mirning.	Cheetup rock shelter provides outstanding evidence for the antiquity of processing and use of cycad seeds by Aboriginal people. The seeds of the cycad are extremely toxic and can cause speedy death if eaten fresh without proper preparation to remove the toxins. The presence of <i>Macrozamia riedlei</i> seeds in a pit lined with Xanthorrhoea (grass tree) leaf bases indicates that the Aboriginal people in the Esperance region had the knowledge to remove the toxins of this important source of carbohydrate and protein at least 13,200 years ago.

Heritage Places	Class	Description	Conservation Values
Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos	Historic	The Batavia and its associated sites hold an important place in the discovery and delineation of the WA coastline. The wreck of the Batavia, and other Dutch ships like her, convinced the VOC (Dutch East India Company) of the necessity of more accurate charts of the coastline and resulted in the commissioning of Vlamingh's 1696 voyage.	Because of its relatively undisturbed nature the archaeological investigation of the wreck itself has revealed a range of objects of considerable value as well as to artefact specialists and historians.
HMAS Sydney II and HSK Kormoran Shipwreck Sites	Historic	The naval battle fought between the Australian warship HMAS Sydney II and the German commerce raider HSK Kormoran off the WA coast during World War II was a defining event in Australia's cultural history. HMAS Sydney II was Australia's most famous warship of the time and this battle has forever linked the stories of these warships to each other. The loss of HMAS Sydney II along with its entire crew of 645 following the battle with HSK Kormoran, remains as Australia's worst naval disaster.	The shipwreck sites of HMAS Sydney II and HSK Kormoran have outstanding heritage value to the nation because of their importance in a defining event in Australia's cultural history and for their part in development of the process of the defence of Australia.
Commonwealth Heritage Properties			
Cliff Point Historic Sites	Historic	Cliff Head is a limestone bluff on the east coast of Garden Island. Evidence of occupation has been reported from the beach just north of the head, the immediate hinterland, the ridge above and on the south face of the ridge.	The Cliff Point Historic Site, individually significant within the area of Garden Island is important as the first site inhabited by Governor Stirling's party in 1829 when founding the colony of WA, and as WA's first official non-convict settlement. The site was occupied in the first instance by Captain Charles Fremantle before the arrival of Captain Stirling. The party occupied the site for two months before a move was made to the Swan River settlement on the mainland.
HMAS Sydney II and HSK Kormoran Shipwreck Sites	Historic	As above	As above
J Gun Battery	Historic	J Battery comprised two 155 mm long range guns, the other similar battery being at Cape Peron on the mainland at the entrance to Cockburn Sound. Located in the dune systems at the north western	J Gun Battery (1942) is individually significant within the area of Garden Island (Register No. 019544) and is historically important as the first gun battery constructed on Garden Island and as one of two long range gun batteries which played a

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Heritage Places	Class	Description	Conservation Values
		corner of Garden Island elements of the J Battery complex are now covered in part by sand.	strategic role in the coastal defences of Cockburn Sound and Fremantle following the entry of Japan into the Second World War (1939-45).

11.5 Fisheries - Commercial

11.5.1 Commonwealth and State Fisheries

The diverse range of habitats and species offshore WA has allowed for various fisheries to develop and operate throughout the region.

The Australian Fisheries Management Authority (AFMA) manages fisheries on behalf of the Commonwealth Government and is bound by objectives under the Commonwealth *Fisheries Management Act 1991*.

WA State commercial fisheries are managed by the WA Department of Primary Industries and Regional Development (WA DPIRD) under the WA *Fish Resources Management Act 1994* (FRMA), Fisheries Resources Management Regulations 1995, relevant gazetted notices and licence conditions, and applicable Fishery Management Plans.

Commonwealth and State managed fisheries that operate within the NWMR and in areas beyond this region are summarised in the **Table 11-4**.

Table 11-4 Commonwealth and State managed fisheries

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
Commonwealth Managed Fisheries						
Southern Bluefin Tuna Fishery	✓	✓	✓	Management area	The Southern Bluefin Tuna Fishery (SBTF) covers the entire EEZ around Australia, out to 200 nm from the coast. They do not fish in the Woodside activity area.	
				Species targeted	Fishing methods	Fishing depth
				Southern bluefin tuna (<i>Thunnus maccoyii</i>)	Longline and purse seine fishing.	Southern bluefin tuna is a pelagic species which can be found to depths of 500 m (AFMA, 2021a)
				Fishing effort	Most of the Australian fishing effort is by purse-seine vessels in the Great Australian Bight and waters off South Australia during summer months, and by longline off the New South Wales coastline during winter months (Patterson <i>et al.</i> , 2020). SBTF is a fishery that is shared amongst many countries. Australia currently has a 35% share of the total global allowable catch, and while wild capture fishing in Australia to sell directly to market can occur anywhere throughout the SBTF's range, currently the vast majority of that quota is value-added through ranching (on-growing the wild captured fish for extra 5-6 months). Ranching requires significant infrastructure, a resident labour force, plus proximity to a fishery able to supply a large quantity of natural feed/sardines (40,000+ tonnes) (for example as available in Port Lincoln). North-west WA is critically important regardless of how the quota is fished because of the proximity to the single spawning ground of this global roaming species. The stock remains classified as overfished.	
Active licences/vessels	Seven purse seine vessels, 20 longline vessels (Patterson <i>et al.</i> , 2020).					
Western Skipjack Tuna Fishery	✓	✓	✓	Management area	The combined western and eastern skipjack tuna (<i>Katsuwonus pelamis</i>) fisheries (STF) encompass the entire Australian EEZ. The Western Skipjack Tuna Fishery (WSTF) extends westward from the SA/Victorian border across the Great Australian Bight and around the west coast of WA to the Cape York Peninsula.	

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Fishery	Woodside Activity Area			Description														
	Browse	NWS/S	NW Cape															
				<table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Western skipjack tuna (<i>Katsuwonus pelamis</i>)</td> <td>Fishers use purse seine gear (about 98% of catch) and sometimes pole and line when fishing for skipjack tuna.</td> <td>Western skipjack tuna is a pelagic species that can be found to depths of 260 m (AFMA, 2021b).</td> </tr> <tr> <td>Fishing effort:</td> <td colspan="2">The Skipjack Tuna Fishery (STF) has not been actively fished since the 2008-2009 fishing season (Patterson <i>et al.</i>, 2020). The management arrangements for this fishery will be reviewed if active boats re-enter the fishery.</td> </tr> <tr> <td>Active licences/vessels:</td> <td colspan="2">No active vessels operating since 2009.</td> </tr> </tbody> </table>	Species targeted	Fishing methods	Fishing depth	Western skipjack tuna (<i>Katsuwonus pelamis</i>)	Fishers use purse seine gear (about 98% of catch) and sometimes pole and line when fishing for skipjack tuna.	Western skipjack tuna is a pelagic species that can be found to depths of 260 m (AFMA, 2021b).	Fishing effort:	The Skipjack Tuna Fishery (STF) has not been actively fished since the 2008-2009 fishing season (Patterson <i>et al.</i> , 2020). The management arrangements for this fishery will be reviewed if active boats re-enter the fishery.		Active licences/vessels:	No active vessels operating since 2009.			
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Western Tuna and Billfish Fishery	✓	✓	✓	<table border="1"> <thead> <tr> <th>Management area</th> <td>The Western Tuna and Billfish Fishery (WTBF) extends to the Australian EEZ boundary in the Indian Ocean.</td> </tr> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Bigeye tuna (<i>Thunnus obesus</i>) Yellowfin tuna (<i>Thunnus albacares</i>) Swordfish (<i>Xiphias gladius</i>) Albacore (<i>Thunnus alalunga</i>) Striped marlin (<i>Kajikia audax</i>)</td> <td>Fishers mainly use pelagic longline fishing gear to catch the targeted species. Minor line (including handline, troll, rod and reel) can also be used.</td> <td>Species have a broad depth distribution, with tuna occurring at 150 – 300 m, striped marlin at 150 m and swordfish at up to 600 m (BRS, 2007).</td> </tr> <tr> <td>Fishing effort:</td> <td colspan="2">The WTBF operates in Australia’s EEZ and high seas of the Indian Ocean. Fishing effort in recent years has been concentrated off south-west WA, with occasional activity off SA.</td> </tr> <tr> <td>Active licences/vessels:</td> <td colspan="2">Two pelagic longline vessels and two minor longline vessels (Patterson <i>et al.</i>, 2020).</td> </tr> </tbody> </table>	Management area	The Western Tuna and Billfish Fishery (WTBF) extends to the Australian EEZ boundary in the Indian Ocean.	Species targeted	Fishing methods	Fishing depth	Bigeye tuna (<i>Thunnus obesus</i>) Yellowfin tuna (<i>Thunnus albacares</i>) Swordfish (<i>Xiphias gladius</i>) Albacore (<i>Thunnus alalunga</i>) Striped marlin (<i>Kajikia audax</i>)	Fishers mainly use pelagic longline fishing gear to catch the targeted species. Minor line (including handline, troll, rod and reel) can also be used.	Species have a broad depth distribution, with tuna occurring at 150 – 300 m, striped marlin at 150 m and swordfish at up to 600 m (BRS, 2007).	Fishing effort:	The WTBF operates in Australia’s EEZ and high seas of the Indian Ocean. Fishing effort in recent years has been concentrated off south-west WA, with occasional activity off SA.		Active licences/vessels:	Two pelagic longline vessels and two minor longline vessels (Patterson <i>et al.</i> , 2020).	
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Fishery	Woodside Activity Area			Description												
	Browse	NWS/S	NW Cape													
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Active licences/vessels:	One active vessel in 2018-2019 (Patterson <i>et al.</i> , 2020).															
North-west Slope Trawl Fishery	✓	✓		Management area	The North-west Slope Trawl Fishery (NWSTF) extends, from 114 °E to 125 °E, from the 200 m isobath to the outer limit of the AFZ (200 nm from the coastline, which is the boundary of the Australian EEZ).											
				Species targeted	Fishing methods	Fishing depth										
				Australian scampi (<i>Metanephrops australiensis</i>) and smaller quantities of velvet and Boschma's scampi (<i>M. velutinus</i> and <i>M. boschmai</i>) Mixed snappers have historically been an important component of the catch.	Demersal trawl.	Typically at depths of 350 to 600 m (Patterson <i>et al.</i> , 2017), however stakeholder consultation has indicated that this may be to depths of 800 m.										

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Fishing effort: The NWSTF commenced in 1985 and the number of active vessels peaked at 21 in the 1986-1987 season and declined through the 1990s before increasing to 10 vessels in 2000-2001 and 2002-2002 seasons. Four vessels operated in the 2017-2018 and 2018-2019 seasons (Patterson <i>et al.</i> 2020). Fishing for scampi occurs over soft, muddy sediments or sandy habitats, using demersal trawl gear on the continental slope (Patterson <i>et al.</i>, 2017).</p> <p>Active licences/vessels: Four vessels (Patterson <i>et al.</i>, 2020).</p>		
State Managed Fisheries						
Pilbara Fish Trawl (Interim) Managed Fishery		✓		<p>Management area The Pilbara Trawl (Interim) Managed Fishery is of high intensity and is divided into two zones and an area governed by Schedule 5 (prohibited to trawling). In addition to the Prohibited Trawl Fishing area, no fish trawl units are allocated for use in Zone 1 or Areas 3 and 6 of Zone 2 (which comprises six management areas) (Newman <i>et al.</i>, 2020a). No fish trawl units have been allocated for use in Area 6 of Zone 2 since the management plan commenced operation in 1998.</p>		
				<p>Species targeted</p> <p>The Pilbara Fish Trawl (Interim) Managed Fishery (PFTIMF) targets more than 50 scalefish species. The five main demersal scalefish species landed by the fisheries in the Pilbara region are blue-spotted emperor, crimson snapper, rosy threadfin bream, red emperor and goldband snapper in 2018 (Newman <i>et al.</i>, 2020a).</p>	<p>Fishing methods</p> <p>Demersal trawl.</p>	<p>Fishing depth</p> <p>The Pilbara Fish Trawl Fishery lands the largest component of the catch and operates in waters between 50 and 200 m water depth (Allen <i>et al.</i>, 2014, Newman <i>et al.</i> 2015). Stakeholders have advised that trawling can occur in depths of up to approximately 800 m.</p>
				<p>Fishing effort:</p> <p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years:</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Pilbara Trawl (Interim) Managed Fishery caught 1996 t in 2018-19, 1780 t in 2017-18, 1529 t in 2016-17, 1172 t in 2015-16, 1105 t in 2014-15.</p> <p>Active licences/vessels: Two Pilbara Trawl (Interim) Managed Fishery vessels in 2017 (Newman <i>et al.</i>, 2020a). Active vessels data are confidential as there were fewer than three vessels in the Pilbara Fish Trawl Interim Managed Fishery (Newman <i>et al.</i>, 2020a).</p>		
Pilbara Trap Managed Fishery		✓	✓	<p>Management area The Pilbara Trap Fishery covers the area from Exmouth northwards and eastwards to the 120° line of longitude, and offshore as far as the 200 m isobath. Like the trawl fishery, the trap fishery is also managed using input controls in the form of individual transferable effort allocations monitored with a satellite-based vessel management system. The fishery includes six licences allocated to three vessels, operating principally from Onslow.</p>		
				<p>Species targeted</p> <p>Pilbara Trap Managed Fishery catch is made up of around 45-50 different fish species. The four main species landed by the fisheries in the Pilbara region are blue-spotted emperor, red emperor, goldband snapper and Rankin cod.</p>	<p>Fishing methods</p> <p>Demersal fish traps.</p>	<p>Fishing depths</p> <p>Greatest effort in waters less than 50 m depth targeting high value species such as red emperor and goldband snapper.</p>
				<p>Fishing effort</p> <p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years: Pilbara Trap Managed Fishery caught 563 t in 2018-19, 573 t in 2017-18, 495 t in 2016-17, 510 t in 2015-16, 268 t in 2014-15. In 2018, the total catch for the Pilbara Trap Managed Fishery was 563 t, making up 21% of the total catch by the Pilbara Demersal Scale Fishery (Newman <i>et al.</i>, 2019).</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Active licences/vessels</p> <p>In the 2019 season, there were six licences in the Pilbara Trap Managed Fishery, (Newman <i>et al.</i>, 2020a). Active vessels data are confidential as there were fewer than three vessels in the Pilbara Trap Managed Fishery (Newman <i>et al.</i>, 2019).</p>		
Pilbara Line Managed Fishery		✓	✓	<p>Management area</p> <p>The Pilbara Line Managed Fishery boat licences are permitted to operate anywhere within "Pilbara waters", bounded by a line commencing at the intersection of 21°56'S latitude and the high water mark on the western side of the North-west Cape on the mainland of WA; west along the parallel to the intersection of 21°56'S latitude and the boundary of the AFZ and north to longitude 120°E.</p>		
				<p>Species targeted</p> <p>The Pilbara Line Managed Fishery catch is made up around 45-50 different fish species. 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 The Pilbara Line Managed Fishery operates on an exemption basis that enables licence holders to fish for any nominated five-month block during the year.</p>	<p>Fishing method</p> <p>Demersal long line.</p>	<p>Fishing depths</p> <p>Pilbara Line Fishing Depth: Operates up to a depth of 600 m.</p>
				<p>Fishing effort</p> <p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years: 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. The total catch in 2018 for the Pilbara Line Managed Fishery was 93 t, making up 3% of the total catch by the Pilbara Demersal Scalefish Fishery (Newman <i>et al.</i>, 2019).</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Active licences/vessels In the 2018 season there are nine individual licences in the Pilbara Line Fishery, held by seven operators. Active vessels data is confidential as there were fewer than three vessels in the Pilbara Line Fishery (Newman <i>et al.</i> , 2018).		
Mackerel Managed Fishery	✓	✓	✓	Management area The commercial fishery extends from Geraldton to the Northern Territory border. There are three managed fishing areas: Kimberley (Area 1), Pilbara (Area 2), and Gascoyne and West Coast (Area 3).		
				Species targeted Spanish mackerel (<i>Scomberomorus commerson</i>) Grey mackerel (<i>S. semifasciatus</i>) Other species from the genus <i>Scomberomorus</i>	Fishing methods Near-surface trawling gear. Jig fishing.	Fishing depth Previous engagement with WAFIC suggests that the depth of fisheries may extend to 70 m.
				Fishing effort: Most of the catch is taken from waters off the Kimberley coasts (Lewis and Brand-Gardner, 2018), reflecting the tropical distribution of mackerel species (Molony <i>et al.</i> , 2015). Most fishing activity occurs around the coastal reefs of the Dampier Archipelago and Port Hedland area, with the seasonal appearance of mackerel in shallower coastal waters most likely associated with feeding and gonad development before spawning (Mackie <i>et al.</i> , 2003). Based on State of the Fisheries annual reports provided by DPIRD, catch trends are as follows: 213 t in 2018-19 (the lowest on record (Lewis <i>et al.</i> , 2020), 283 t in 2017-18, 276 t in 2016-17, 302 t in 2015-16, 322 t in 2014-15.		
				Active licences/vessels: Fifteen boats fished in 2018, with approximately 35-40 people directly employed in the Mackerel Managed Fishery, primarily from May-November (Lewis <i>et al.</i> , 2020).		
Marine Aquarium Managed Fishery	✓	✓	✓	Management area The Marine Aquarium Managed Fishery is able to operate in all State waters. The fishery is typically more active in waters south of Broome and higher levels of effort around the Capes region, Perth, Geraldton, Exmouth, Dampier and Broome (Newman <i>et al.</i> , 2020b).		
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Finfish, hard coral, soft coral, tridacnid clams, syngnathids (seahorses and pipefish), other invertebrates (including molluscs, crustaceans, echinoderms etc.), algae, seagrasses and 'live rock'.	The fishery is diver-based, which typically restricts effort to safe diving depths (less than 30 m).	Less than 30 m, as advised by WAFIC.
				Fishing effort:	Total catch for the Marine Aquarium Managed Fishery in 2018 was 156,188 fishes, 32.025 t of coral, live rock and living sand and 176.02 L of marine plants and live feed.	
				Active licences/vessels:	Eleven licences were active in 2019 (Newman <i>et al.</i> , 2020b).	
Beche-de-mer Fishery	✓	✓	✓	Management area	Fishing occurs in the northern half of WA from Exmouth Gulf to the NT border and is managed under Ministerial Exemptions.	
				Species targeted	Fishing methods	Fishing depth
				The sea cucumber fishery targets two main species: sandfish (<i>Holothuria scabra</i>) and redfish (<i>Actinopyga echinites</i>).	Diving	The targeted species typically inhabit nearshore in shallow depths.
				Fishing effort	Based on State of the Fisheries annual reports provided by DPRID, catch trends are as follows: 62t in 2018 (Gaughan and Santoro, 2020), 135t in 2017, 93t in 2016, 38t in 2015	
				Active licences/vessels	Six active licences in 2019 (Hart <i>et al.</i> , 2019). Active vessels data is confidential as there were fewer than three vessels.	
Onslow Prawn Managed Fishery		✓		Management area	The Onslow Prawn Managed Fishery encompasses a portion of the continental shelf off the Pilbara.	
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description						
	Browse	NWS/S	NW Cape							
				<p>The fishery targets: Western king prawns (<i>Penaeus esculentus</i>) Brown tiger prawns (<i>Penaeus esculentus</i>) Blue endeavour prawns (<i>Metapenaeus endeavouri</i>)</p> <p>Low opening, otter prawn trawl systems.</p> <p>Prawn trawling takes place in water depths of approximately 30 metres and less (licence holder feedback). Fishery and or fishing activity overlaps the Beadon Creek dredging scope (Sporer <i>et al.</i>, 2015).</p> <p>Fishing effort: The total landings for the Onslow Prawn Managed Fishery in 2018 were less than 60 t below the target catch range (Kangas <i>et al.</i>, 2020a).</p> <p>Active licences/vessels: One vessel (Kangas <i>et al.</i>, 2020a).</p>						
Pearl Oyster Managed Fishery	✓	✓	✓	<p>Management area Located in shallow coastal waters with the pearl oyster managed fishery designated by four zones extending from Exmouth to Kununurra and the seaward boundary demarcated by the 200 nm EEZ.</p> <table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Pearl oysters (<i>Pinctada maxima</i>).</td> <td>Drift diving.</td> <td>Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).</td> </tr> </tbody> </table> <p>Fishing effort: In 2018, catch was taken from Zones 2 and 3 with no fishing in Zone 1. The number of pearl oysters caught for 2018-19 was 614,002. Total effort was 15,637 dive hours, this was an increase from 2017 effort of 12,845 hours. No fishing occurred in Zone 1 in 2017 and 2018 (Gaughan and Santoro, 2020).</p> <p>Active licences/vessels: 15,637 diver hours (Hart <i>et al.</i>, 2020a).</p>	Species targeted	Fishing methods	Fishing depth	Pearl oysters (<i>Pinctada maxima</i>).	Drift diving.	Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).
Species targeted	Fishing methods	Fishing depth								
Pearl oysters (<i>Pinctada maxima</i>).	Drift diving.	Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).								
		✓	✓	<p>Management area The Pilbara Crab Managed Fishery comprises WA waters off the north-western coast of WA north of 23° 34' south latitude and west of 120° 00' east longitude. Areas of the fishery north and east of Exmouth and</p>						

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
Pilbara Crab Managed Fishery				nearshore are currently closed as per Schedule 2 of the Draft Management Plan for the Pilbara Crab Managed Fishery.			
				Species targeted	Fishing methods	Fishing depth	
				Crabs of the Family Portunidae, excluding crabs of the genus <i>Scylla</i> .	Traps.	Up to 50 m deep.	
				Fishing effort:	The capacity of the fishery is 600 traps.		
				Active licences/vessels:	No information available at this time.		
South-west Coast Salmon Managed Fishery	✓	✓	✓	Management area			
				Species targeted	Fishing methods	Fishing depth	
				Western Australian salmon (<i>Arripis truttaceus</i>)	Beach seine nets.	Information not available however, species generally found in shallow waters (up to 30 m).	
				Fishing effort:	No fishing occurs north of the Perth metropolitan area, despite the managed fishery boundary extending to Cape Beaufort (WA/Northern Territory border), as advised by WAFIC. The 2018 commercial catch was 191 t, with 72% taken by the South West Coast Salmon Managed Fishery, 25% by the South Coast Salmon Managed Fishery and 3% by other fisheries (Duffy and Blay, 2020a).		
				Active licences/vessels:	Six licences.		
	✓	✓	✓	Management area			
				The Specimen Shell Managed Fishery (SSMF) encompasses the entire WA coastline, but effort is concentrated in areas adjacent to the population centres such as Broome, Exmouth, Shark Bay,			

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
Specimen Shell Managed Fishery				Geraldton, Perth, Mandurah, the Capes area and Albany (Hart <i>et al.</i> , 2020b). There are a number of closed areas where the SSMF is not permitted to operate. These include various marine parks and aquatic reserves, such as Ningaloo Marine Park.			
				Species targeted	Fishing methods	Fishing depth	
				The Specimen Shell Managed Fishery targets the collection of specimen shells for display, collection, cataloguing and sale.	Collection is predominantly by hand when diving to wading in shallow, coastal waters, though in deeper water collection may be conducted by remotely operated vehicles (limited to one per licence).	For collection by hand, (diver-based) this typically restricts effort to safe diving depths (less than 30 m). ROV collection could enable depths up to 300 m (Hart <i>et al.</i> , 2017). In the past there has been one licence holder in the Specimen Shell Managed Fishery who has trialled ROV means of shell collection, WAFIC have provided advice that this fishery is no longer active.	
				Fishing effort:	Information not available.		
				Active licences/vessels:	In 2018 there were 31 licences with only two divers allowed in the water per licences at one time (Hart <i>et al.</i> , 2018). The number of people employed regularly in the fishery is likely to be about 21 (Hart <i>et al.</i> , 2018).		
West Australian Abalone Fishery	✓	✓	✓	Management area			
				The Western Australian Abalone Fishery includes all coastal waters from the WA and SA border to the WA and NT border. The fishery is concentrated on the south coast and the west coast.			
				Species targeted	Fishing methods	Fishing depth	
Greenlip abalone (<i>Haliotis laevis</i>) Brownlip abalone (<i>Haliotis conicopora</i>) Roe's abalone (<i>Haliotis roei</i>)	Divers.	Distribution to 5 m depth for Roe's abalone and 40 m depth for greenlip / brownlip abalone (DOF, 2011).					

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Fishing effort: In 2018, the total commercial catch was 48 t, 1 t less than the catch in each of the last two seasons. No commercial fishing for abalone north of Moore River (Zone 8 of the managed fishery) has occurred since 2011–2012 (Strain <i>et al.</i>, 2018).</p> <p>Active licences/vessels: 26 vessels active in Roe's abalone fishery (WAFIC⁵).</p>		
West Coast Deep Sea Crustacean Managed Fishery	✓	✓	✓	<p>Management area The West Coast Deep Sea Crustacean Managed Fishery extends north from Cape Leeuwin to the WA/NT border in water depths greater than 150 m within the AFZ.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				<p>The fishery targets deepwater crustaceans. Catches were dominated by crystal crabs of which 99% of their Total Allowable Catch (TAC) was landed (How and Orme, 2020a). Crystal (snow) crab (<i>Chaceon albus</i>) Giant (king) crab (<i>Pseudocarcinus gigas</i>) Champagne (spiny) crabs (<i>Hypothalassia acerba</i>)</p>	<p>Baited pots, or traps, are operated in long-lines which have between 80 and 180 pots attached to a main line marked by a float at each end.</p>	<p>Deeper than 150 m (and mostly at depths of between 500 m – 800 m). Most of the commercial Crystal crab catch is taken in depths of 500 m – 800 m (WAFIC⁶).</p>
				<p>Fishing effort: The total landings in 2018 was 168. t. Two vessels operated in the fishery in 2017, using baited pots operated in a longline formation in the shelf edge waters, mostly in depths between 500 and 800 m (How and Orme, 2020a). Fishing effort was concentrated between Fremantle and Carnarvon.</p>		
				<p>Active licences/vessels: There were four active vessels in 2018 (How and Orme, 2020a).</p>		

⁵ <https://www.wafic.org.au/fishery/roes-abalone-fishery/>

⁶ <https://www.wafic.org.au/fishery/west-coast-deep-sea-crustacean-fishery/>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
Abrolhos Islands and Mid-West Trawl Fishery			✓	Management area	The Abrolhos Islands and Mid-West Trawl Fishery (AIMWTMF) operates around the Abrolhos Islands within the SWMR.	
				Species targeted	Fishing methods	Fishing depth
				Saucer scallops (<i>Ylistrum balloti</i> , formerly <i>Amusium balloti</i>)	Trawl.	Information not available, however, the species occurs at depth of around 30-60 m and therefore fishing effort would likely be at these depths (Himmelman <i>et al.</i> , 2009).
				Fishing effort:	The scallop landings in the AIMWTMF were 31.0 t meat weight (154.8 t whole weight). Between 2011 and 2015, the annual pre-season surveys showed very low recruitment (1-year old), as a result of the 2011 extreme marine heatwave and subsequent poor spawning stock (Kangas <i>et al.</i> , 2020b). The fishery was closed between 2011 and 2016.	
				Active licences/vessels:	Information about licences or vessels is not available but the Department of Primary Industry and Regional Development reported 774 t of catch from this fishery in the 2019 annual report (DPIRD, 2019).	
Broome Prawn Managed Fishery	✓			Management area	The Broome Prawn Managed Fishery (BPMF) operates off Broome and forms part of the North Coast Prawn Fishery.	
				Species targeted	Fishing methods	Fishing depth
				Western king prawn (<i>Penaeus latisulcatus</i>) Coral prawn	Trawl.	Trawling is generally in waters between 30 and 60 m deep, however can occur down to 100 m (DOEH, 2004).
				Fishing effort:	BPMF recorded extremely low fishing effort in 2018. Only two vessels undertook trial fishing to investigate whether the catch rates were sufficient for commercial fishing. This resulted in negligible landings of Western king prawn (Kangas <i>et al.</i> , 2020a).	

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
				Active licences/vessels: Two vessels conducting fishing trial operated in 2018 (Kangas <i>et al.</i> , 2020a).			
Exmouth Gulf Prawn Managed Fishery			✓	Management area The estimated employment in the fishery in 2017 was 18 people including skippers and other crew (Kangas <i>et al.</i> , 2018). The fishery occupies a total area of 4000 km ² , with only half of this area being trawled (Fletcher and Santoro, 2015).			
				Species targeted	Fishing methods	Fishing depth	
				Western king prawn (<i>Penaeus latisulcatus</i>) Brown tiger prawn (<i>Penaeus esculentus</i>) Blue endeavour prawn (<i>Metapenaeus endeavouri</i>) Banana prawn (<i>Penaeus merguinensis</i>)	Trawl.	Information not available.	
				Fishing effort:	The total landings of prawns in 2018 were 880 t (Kangas <i>et al.</i> , 2020a). In the 2016 season, a fishing effort of about 23,000 hours resulted in a catch of 822 t.		
				Active licences/vessels:	The precise number of vessels is unreported. Eighteen people were said to be employed in this fishery in 2018 (Kangas <i>et al.</i> , 2019); however, in 2013 it was reported that 18 skippers as well as other crew and support staff were employed (WAFIC ⁷).		
Gascoyne Demersal Scalefish Managed Fishery			✓	Management area The Gascoyne Demersal Scalefish Fishery (GDSF) is located between the southern Ningaloo Coast to south of Shark Bay (23°07.30'S to 26°.30'S) with a closure area at Point Maud to Tantabiddi (21°56.30'S) (WAFIC ⁸).			
				Species targeted	Fishing methods	Fishing depth	

⁷ <https://www.wafic.org.au/fishery/exmouth-gulf-prawn-fishery/>

⁸ <https://www.wafic.org.au/fishery/gascoyne-demersal-scalefish-fishery/>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Pink snapper (<i>Chrysophrys auratus</i>) Goldband snapper (<i>Pristipomoides multidentis</i>) Red emperor (<i>Lutjanus sebae</i>) Cods (<i>Gadus morhua</i>) Emperors (<i>Lethrinus miniatus</i>)	Mechanised handlines.	Information not available.
				Fishing effort:	The GDSF reported a total commercial catch of 210 t in 2017-18.	
				Active licences/vessels:	In 2018, 13 vessels fished during the season, in the 2017 season there were 16 vessels (Gaughan and Santoro, 2018).	
Kimberley Developing Mud Crab Fishery	✓			Management area	The Kimberley Developing Mud Crab Fishery is one of two small trap-based crab fisheries that exist in the North Coast Bioregion between Cambridge Gulf and Broome (Gaughan and Santoro, 2018).	
				Species targeted	Fishing methods	Fishing depth
				Brown mud crab (<i>Scylla olivacea</i>) Green mud crab (<i>Scylla serrata</i>)	Trap.	Information not available.
				Fishing effort:	The catch landed represents all commercially caught mud crabs landed in WA for 2018. A nominal catch rate of 0.66 kg/traplift was recorded for 2018, which is a 28% decrease from 2017 but remains above the harvest strategy threshold (Johnston <i>et al.</i> , 2020).	
				Active licences/vessels:	There are currently three licences issued to commercial operators (600 trap limit), and three exemptions issued to Indigenous groups (total of 210 traps currently allocated of a maximum 600 traps) (Johnston <i>et al.</i> , 2020).	
Nickol Bay Prawn Managed Fishery		✓		Management area	The Nickol Bay Prawn Managed Fishery operates in nearshore and offshore waters of the Pilbara region along the NWS.	
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description						
	Browse	NWS/S	NW Cape							
				<p>Banana prawn (<i>Penaeus merguensis</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.

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>						
				<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: 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>)</td> <td>Purse seine.</td> <td>Information not available.</td> </tr> </tbody> </table>	Species targeted	Fishing methods	Fishing depth	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>)	Purse seine.	Information not available.
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				<p>Fishing effort: Information not available</p>						
<p>Active licences/vessels: Seven vessels in 2017 (Gaughan and Santoro, 2018).</p>										
<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.

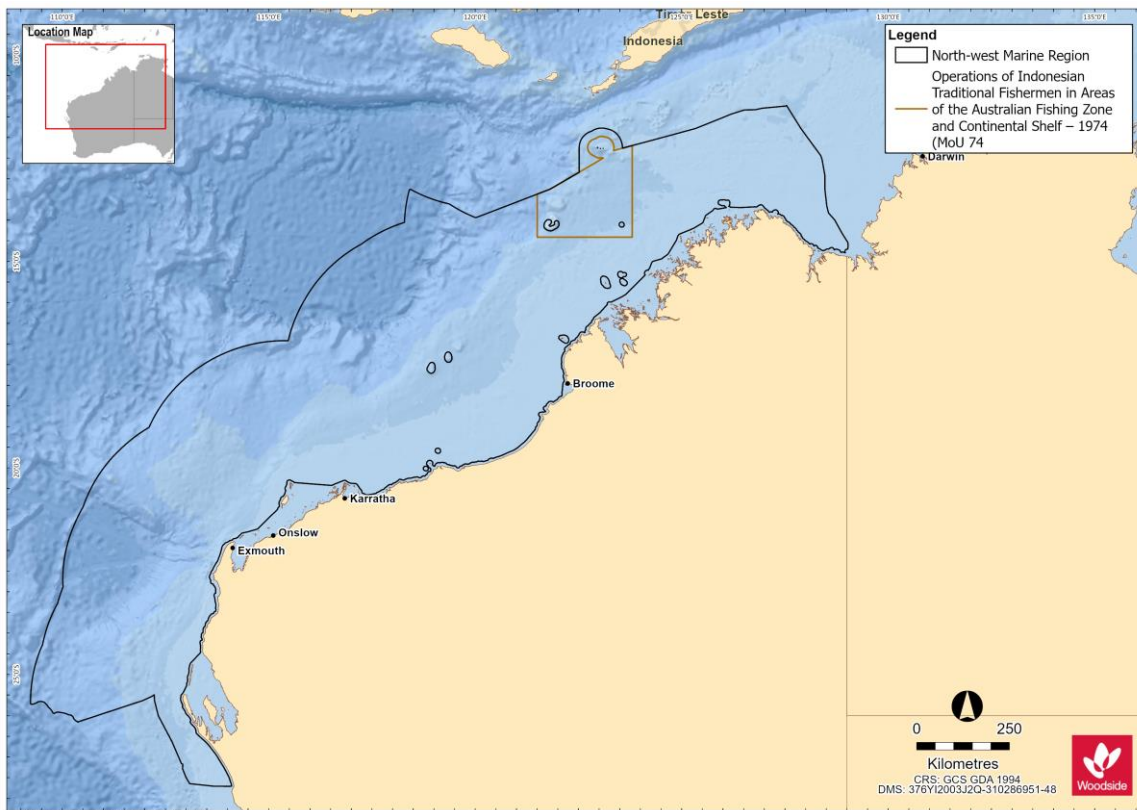


Figure 11-1 MOU 74 Box. Operations of Indonesian Traditional Fishermen in Areas of the Australian Fishing Zone and Continental Shelf – 1974

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: 22-Jun-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:	31

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:	27
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:	3
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
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
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
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
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
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

Current Scientific Name	Status	Type of Presence
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
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Megaptera novaeangliae Humpback Whale [38]		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
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

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	
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)

Title of referral	Reference	Referral Outcome	Assessment Status
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
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
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		
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

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 22-Jun-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:	1
National Heritage Places:	2
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	4
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	53
Listed Migratory Species:	70

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	5
Commonwealth Heritage Places:	3
Listed Marine Species:	121
Whales and Other Cetaceans:	37
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	13
Habitat Critical to the Survival of Marine Turtles:	4

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	8
Regional Forest Agreements:	None
Nationally Important Wetlands:	3
EPBC Act Referrals:	179
Key Ecological Features (Marine):	9
Biologically Important Areas:	27
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

Name	State	Legal Status
The Ningaloo Coast	WA	Declared property

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status
Historic		
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place

Natural

The Ningaloo Coast	WA	Listed place
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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

EEZ and Territorial Sea

Extended Continental Shelf

Extended Continental Shelf

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Foraging, feeding or related behaviour known to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
CRUSTACEAN		
Kumonga exleyi Cape Range Remipede [86875]	Vulnerable	Species or species habitat known to occur within area
FISH		
Milyeringa veritas Cape Range Cave Gudgeon, Blind Gudgeon [66676]	Vulnerable	Species or species habitat known to occur within area
Ophisternon candidum Blind Cave Eel [66678]	Vulnerable	Species or species habitat known to occur within area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat known to occur within area
Rhinonicteris aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area

REPTILE

Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area

SHARK

Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
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Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Centrophorus uyato listed as Centrophorus zeehaani Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Foraging, feeding or related behaviour known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat known to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name

State

Defence

Defence - EXMOUTH VLF TRANSMITTER STATION [50123]

WA

Defence - EXMOUTH VLF TRANSMITTER STATION [50122]

WA

Defence - LEARMONTH - AIR WEAPONS RANGE [50193]

WA

Defence - LEARMONTH RADAR SITE - VLAMING HEAD EXMOUTH [50001]

WA

Unknown

Commonwealth Land - [52236]

WA

Commonwealth Heritage Places

[\[Resource Information \]](#)

Name

State

Status

Historic

[HMAS Sydney II and HSK Kormoran Shipwreck Sites](#)

EXT

Listed place

Natural

[Learmonth Air Weapons Range Facility](#)

WA

Listed place

[Ningaloo Marine Area - Commonwealth Waters](#)

WA

Listed place

Listed Marine Species

[\[Resource Information \]](#)

Scientific Name

Threatened Category

Presence Text

Bird

[Actitis hypoleucos](#)

Common Sandpiper [59309]

Species or species habitat known to occur within area

[Anous stolidus](#)

Common Noddy [825]

Species or species habitat likely to occur within area

[Anous tenuirostris melanops](#)

Australian Lesser Noddy [26000]

Vulnerable

Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardena carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardena pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Foraging, feeding or related behaviour known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Pterodroma macroptera Great-winged Petrel [1035]		Foraging, feeding or related behaviour known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding known to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area
Fish		
Acentronura larsonae Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
Dugong dugon Dugong [28]		Breeding known to occur within area
Reptile		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Aipysurus pooleorum Shark Bay Seasnake [66061]		Species or species habitat may occur within area
Aipysurus tenuis Brown-lined Seasnake [1121]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Hydrelaps darwiniensis Black-ringed Seasnake [1100]		Species or species habitat may occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli Small-headed Seasnake [75601]		Species or species habitat may occur within area
Leioselasma czeblukovi as Hydrophis czeblukovi Fine-spined Seasnake, Geometrical Seasnake [87374]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahalensis Australian Humpback Dolphin [87942]		Species or species habitat known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [[Resource Information](#)]

Park Name	Zone & IUCN Categories
Abrolhos	Habitat Protection Zone (IUCN IV)
Carnarvon Canyon	Habitat Protection Zone (IUCN IV)
Gascoyne	Habitat Protection Zone (IUCN IV)
Abrolhos	Multiple Use Zone (IUCN VI)
Argo-Rowley Terrace	Multiple Use Zone (IUCN VI)
Gascoyne	Multiple Use Zone (IUCN VI)
Montebello	Multiple Use Zone (IUCN VI)
Shark Bay	Multiple Use Zone (IUCN VI)
Christmas Island	National Park Zone (IUCN II)
Gascoyne	National Park Zone (IUCN II)
Ningaloo	National Park Zone (IUCN II)
Ningaloo	Recreational Use Zone (IUCN IV)
Ningaloo	Recreational Use Zone (IUCN IV)

Habitat Critical to the Survival of Marine Turtles

Scientific Name	Behaviour	Presence
Aug - Sep		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur
Nov-Feb		

Scientific Name	Behaviour	Presence
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur

Nov - May

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]	Nesting	Known to occur
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Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Protected Area Name	Reserve Type	State
Cape Range	National Park	WA
Cape Range (South)	National Park	WA
Jurabi Coastal Park	5(1)(h) Reserve	WA
Muiron Islands	Nature Reserve	WA
Muiron Islands	Marine Management Area	WA
Ningaloo	Marine Park	WA
Nyingguulu (Ningaloo) Coastal Reserve	5(1)(h) Reserve	WA
Serrurier Island	Nature Reserve	WA

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State
Bundera Sinkhole	WA
Cape Range Subterranean Waterways	WA
Learmonth Air Weapons Range - Saline Coastal Flats	WA

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Project Highclere Cable Lay and Operation	2022/09203		Completed

Action clearly unacceptable

Highlands 3D Marine Seismic Survey	2012/6680	Action Clearly Unacceptable	Completed
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Title of referral	Reference	Referral Outcome	Assessment Status
Action clearly unacceptable			
Controlled action			
'Van Gogh' Petroleum Field Development	2007/3213	Controlled Action	Post-Approval
Construct and operate LNG & domestic gas plant including onshore and offshore facilities - Wheatston	2008/4469	Controlled Action	Post-Approval
Develop Jansz-lo deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-	2005/2184	Controlled Action	Post-Approval
Development of Angel gas and condensate field, North West Shelf	2004/1805	Controlled Action	Post-Approval
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Development of Coniston/Novara fields within the Exmouth Sub-basin	2011/5995	Controlled Action	Post-Approval
Development of Stybarrow petroleum field incl drilling and facility installation	2004/1469	Controlled Action	Post-Approval
Echo-Yodel Production Wells	2000/11	Controlled Action	Post-Approval
Enfield full field development	2001/257	Controlled Action	Post-Approval
Equus Gas Fields Development Project, Carnarvon Basin	2012/6301	Controlled Action	Completed
Gorgon Gas Development	2003/1294	Controlled Action	Post-Approval
Gorgon Gas Development 4th Train Proposal	2011/5942	Controlled Action	Post-Approval
Greater Enfield (Vincent) Development	2005/2110	Controlled Action	Post-Approval
Light Crude Oil Production	2001/365	Controlled Action	Post-Approval
Nava-1 Cable System	2001/510	Controlled Action	Completed
Ningaloo Lighthouse Development, 17km north west Exmouth, Western Australia	2020/8693	Controlled Action	Assessment Approach
Pluto Gas Project	2005/2258	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Pluto Gas Project Including Site B	2006/2968	Controlled Action	Post-Approval
Pyrenees Oil Fields Development	2005/2034	Controlled Action	Post-Approval
The Scarborough Project - FLNG & assoc subsea infrastructure, Carnarvon Basin	2013/6811	Controlled Action	Post-Approval
Vincent Appraisal Well	2000/22	Controlled Action	Post-Approval
Yardie Creek Road Realignment Project	2021/8967	Controlled Action	Assessment Approach
Not controlled action			
'Goodwyn A' Low Pressure Train Project	2003/914	Not Controlled Action	Completed
'Van Gogh' Oil Appraisal Drilling Program, Exploration Permit Area WA-155-P(1)	2006/3148	Not Controlled Action	Completed
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed
Bollinger 2D Seismic Survey 200km North of North West Cape WA	2004/1868	Not Controlled Action	Completed
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
Cazadores 2D seismic survey	2004/1720	Not Controlled Action	Completed
Construction and operation of an unmanned sea platform and connecting pipeline to Varanus Island for	2004/1703	Not Controlled Action	Completed
Controlled Source Electromagnetic Survey	2007/3262	Not Controlled Action	Completed
Development of Halyard Field off the west coast of WA	2010/5611	Not Controlled Action	Completed
Development of Mutineer and Exeter petroleum fields for oil production, Permit	2003/1033	Not Controlled Action	Completed
Eagle-1 Exploration Drilling, North West Shelf, WA	2019/8578	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Echo A Development WA-23-L, WA-24-L	2005/2042	Not Controlled Action	Completed
Exploration drilling well WA-155-P(1)	2003/971	Not Controlled Action	Completed
Exploration of appraisal wells	2006/3065	Not Controlled Action	Completed
Exploration Well in Permit Area WA-155-P(1)	2002/759	Not Controlled Action	Completed
Exploratory drilling in permit area WA-225-P	2001/490	Not Controlled Action	Completed
HCA05X Macedon Experimental Survey	2004/1926	Not Controlled Action	Completed
Hess Exploration Drilling Programme	2007/3566	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Infill Production Well (Griffin-9)	2001/417	Not Controlled Action	Completed
Jansz-2 and 3 Appraisal Wells	2002/754	Not Controlled Action	Completed
Klammer 2D Seismic Survey	2002/868	Not Controlled Action	Completed
Maia-Gaea Exploration wells	2000/17	Not Controlled Action	Completed
Manaslu - 1 and Huascarán - 1 Offshore Exploration Wells	2001/235	Not Controlled Action	Completed
Montesa-1 and Bultaco-1 Exploration Wells	2000/102	Not Controlled Action	Completed
North Rankin B gas compression facility	2005/2500	Not Controlled Action	Completed
Pipeline System Modifications Project	2000/3	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Searipple gas and condensate field development	2000/89	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Spool Base Facility	2001/263	Not Controlled Action	Completed
Subsea Gas Pipeline From Stybarrow Field to Griffin Venture Gas Export Pipeline	2005/2033	Not Controlled Action	Completed
sub-sea tieback of Perseus field wells	2004/1326	Not Controlled Action	Completed
Telstra North Rankin Spur Fibre Optic Cable	2016/7836	Not Controlled Action	Completed
To construct and operate an offshore submarine fibre optic cable, WA	2014/7373	Not Controlled Action	Completed
WA-295-P Kerr-McGee Exploration Wells	2001/152	Not Controlled Action	Completed
Wanda Offshore Research Project, 80 km north-east of Exmouth, WA	2018/8293	Not Controlled Action	Completed
Western Flank Gas Development	2005/2464	Not Controlled Action	Completed
Wheatstone 3D seismic survey, 70km north of Barrow Island	2004/1761	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Kate' 3D marine seismic survey, exploration permits WA-320-P and WA-345-P, 60km	2005/2037	Not Controlled Action (Particular Manner)	Post-Approval
'Tourmaline' 2D marine seismic survey, permit areas WA-323-P, WA-330-P and WA-32	2005/2282	Not Controlled Action (Particular Manner)	Post-Approval
"Leanne" offshore 3D seismic exploration, WA-356-P	2005/1938	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D seismic surveys	2005/2151	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey	2012/6296	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey	2008/4493	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
3D marine seismic survey	2008/4281	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey (WA-482-P, WA-363-P), WA	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in Permit Areas WA-15-R, WA-18-R, WA-205-P, WA-253-P, WA-267-P and WA-268-P	2003/1271	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in WA 457-P & WA 458-P, North West Shelf, offshore WA	2013/6862	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey over petroleum title WA-268-P	2007/3458	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Surveys - Contos CT-13 & Supertubes CT-13, offshore WA	2013/6901	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic survey	2006/2715	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, WA	2008/4428	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic survey	2006/2781	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Agrippina 3D Seismic Marine Survey	2009/5212	Not Controlled Action (Particular Manner)	Post-Approval
Apache Northwest Shelf Van Gogh Field Appraisal Drilling Program	2007/3495	Not Controlled Action (Particular Manner)	Post-Approval
Aperio 3D Marine Seismic Survey, WA	2012/6648	Not Controlled Action (Particular Manner)	Post-Approval
Artemis-1 Drilling Program (WA-360-P)	2010/5432	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Babylon 3D Marine Seismic Survey, Commonwealth Waters, nr Exmouth WA	2013/7081	Not Controlled Action (Particular Manner)	Post-Approval
Balnaves Condensate Field Development	2011/6188	Not Controlled Action (Particular Manner)	Post-Approval
Bonaventure 3D seismic survey	2006/2514	Not Controlled Action (Particular Manner)	Post-Approval
Cable Seismic Exploration Permit areas WA-323-P and WA-330-P	2008/4227	Not Controlled Action (Particular Manner)	Post-Approval
CGGVERITAS 2010 2D Seismic Survey	2010/5714	Not Controlled Action (Particular Manner)	Post-Approval
Charon 3D Marine Seismic Survey	2007/3477	Not Controlled Action (Particular Manner)	Post-Approval
Coverack Marine Seismic Survey	2001/399	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval
CVG 3D Marine Seismic Survey	2012/6654	Not Controlled Action (Particular Manner)	Post-Approval
DAVROS MC 3D marine seismic survey northwaet of Dampier, WA	2013/7092	Not Controlled Action (Particular Manner)	Post-Approval
Decommissioning of the Legendre facilities	2010/5681	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Drilling Program	2010/5532	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
Demeter 3D Seismic Survey, off Dampier, WA	2002/900	Not Controlled Action (Particular Manner)	Post-Approval
Draeck 3D Marine Seismic Survey, WA-205-P	2006/3067	Not Controlled Action (Particular Manner)	Post-Approval
Drilling 35-40 offshore exploration wells in deep water	2008/4461	Not Controlled Action (Particular Manner)	Post-Approval
Eendracht Multi-Client 3D Marine Seismic Survey	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M3 & Vincent 4D Marine Seismic Surveys	2008/3981	Not Controlled Action (Particular Manner)	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Enfield M3 4D, Vincent 4D & 4D Line Test Marine Seismic Surveys	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M4 4D Marine Seismic Survey	2008/4558	Not Controlled Action (Particular Manner)	Post-Approval
Enfield oilfield 3D Seismic Survey	2006/3132	Not Controlled Action (Particular Manner)	Post-Approval
Exmouth West 2D Marine Seismic Survey	2008/4132	Not Controlled Action (Particular Manner)	Post-Approval
Exploration drilling of Zeus-1 well	2008/4351	Not Controlled Action (Particular Manner)	Post-Approval
Fletcher-Finucane Development, WA26-L and WA191-P	2011/6123	Not Controlled Action (Particular Manner)	Post-Approval
Foxhound 3D Non-Exclusive Marine Seismic Survey	2009/4703	Not Controlled Action (Particular Manner)	Post-Approval
Gazelle 3D Marine Seismic Survey in WA-399-P and WA-42-L	2010/5570	Not Controlled Action (Particular Manner)	Post-Approval
Geco Eagle 3D Marine Seismic Survey	2008/3958	Not Controlled Action (Particular Manner)	Post-Approval
Glencoe 3D Marine Seismic Survey WA-390-P	2007/3684	Not Controlled Action (Particular Manner)	Post-Approval
Greater Western Flank Phase 1 gas Development	2011/5980	Not Controlled Action (Particular Manner)	Post-Approval
Grimalkin 3D Seismic Survey	2008/4523	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
<u>Not controlled action (particular manner)</u>			
		Manner)	
Guacamole 2D Marine Seismic Survey	2008/4381	Not Controlled Action (Particular Manner)	Post-Approval
Harmony 3D Marine Seismic Survey	2012/6699	Not Controlled Action (Particular Manner)	Post-Approval
Harpy 1 exploration well	2001/183	Not Controlled Action (Particular Manner)	Post-Approval
Honeycombs MC3D Marine Seismic Survey	2012/6368	Not Controlled Action (Particular Manner)	Post-Approval
Huzzas MC3D Marine Seismic Survey (HZ-13) Carnarvon Basin, offshore WA	2013/7003	Not Controlled Action (Particular Manner)	Post-Approval
Huzzas phase 2 marine seismic survey, Exmouth Plateau, Northern Carnarvon Basin, WA	2013/7093	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
John Ross & Rosella Off Bottom Cable Seismic Exploration Program	2008/3966	Not Controlled Action (Particular Manner)	Post-Approval
Judo Marine 3D Seismic Survey within and adjacent to WA-412-P	2009/4801	Not Controlled Action (Particular Manner)	Post-Approval
Judo Marine 3D Seismic Survey within and adjacent to WA-412-P	2008/4630	Not Controlled Action (Particular Manner)	Post-Approval
Julimar Brunello Gas Development Project	2011/5936	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Klimt 2D Marine Seismic Survey	2007/3856	Not Controlled Action (Particular Manner)	Post-Approval
Laverda 3D Marine Seismic Survey and Vincent M1 4D Marine Seismic Survey	2010/5415	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
Leopard 2D marine seismic survey	2005/2290	Not Controlled Action (Particular Manner)	Post-Approval
Lion 2D Marine Seismic Survey	2007/3777	Not Controlled Action (Particular Manner)	Post-Approval
Macedon Gas Field Development	2008/4605	Not Controlled Action (Particular Manner)	Post-Approval
Marine reconnaissance survey	2008/4466	Not Controlled Action (Particular Manner)	Post-Approval
Moosehead 2D seismic survey within permit WA-192-P	2005/2167	Not Controlled Action (Particular Manner)	Post-Approval
Munmorah 2D seismic survey within permits WA-308/9-P	2003/970	Not Controlled Action (Particular Manner)	Post-Approval
Ocean Bottom Cable Seismic Program, WA-264-P	2007/3844	Not Controlled Action (Particular Manner)	Post-Approval
Ocean Bottom Cable Seismic Survey	2005/2017	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Offshore Canning Multi Client 2D Marine Seismic Survey	2010/5393	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Drilling Campaign	2011/5830	Not Controlled Action (Particular Manner)	Post-Approval
Orcus 3D Marine Seismic Survey in WA-450-P	2010/5723	Not Controlled Action (Particular Manner)	Post-Approval
Osprey and Dionysus Marine Seismic Survey	2011/6215	Not Controlled Action (Particular Manner)	Post-Approval
Palta-1 exploration well in Petroleum Permit Area WA-384-P	2011/5871	Not Controlled Action (Particular Manner)	Post-Approval
Pomodoro 3D Marine Seismic Survey in WA-426-P and WA-427-P	2010/5472	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees 4D Marine Seismic Monitor Survey, HCA12A	2012/6579	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees-Macedon 3D marine seismic survey	2005/2325	Not Controlled Action (Particular Manner)	Post-Approval
Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
Repsol 3d & 2D Marine Seismic Survey	2012/6658	Not Controlled Action (Particular Manner)	Post-Approval
Rose 3D Seismic Program	2008/4239	Not Controlled Action (Particular Manner)	Post-Approval

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
Salsa 3D Marine Seismic Survey	2010/5629	Not Controlled Action (Particular Manner)	Post-Approval
Santos Winchester three dimensional seismic survey - WA-323-P & WA-330-P	2011/6107	Not Controlled Action (Particular Manner)	Post-Approval
search for HMAS Sydney	2006/3071	Not Controlled Action (Particular Manner)	Post-Approval
Skorpion Marine Seismic Survey WA	2001/416	Not Controlled Action (Particular Manner)	Post-Approval
Sovereign 3D Marine Seismic Survey	2011/5861	Not Controlled Action (Particular Manner)	Post-Approval
Stag 4D & Reindeer MAZ Marine Seismic Surveys, WA	2013/7080	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow 4D Marine Seismic Survey	2011/5810	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow Baseline 4D marine seismic survey	2008/4530	Not Controlled Action (Particular Manner)	Post-Approval
Tantabiddi Boat Ramp Sand Bypassing	2015/7411	Not Controlled Action (Particular Manner)	Post-Approval
Tidepole Maz 3D Seismic Survey Campaign	2007/3706	Not Controlled Action (Particular Manner)	Post-Approval
Tortilla 2D Seismic Survey, WA	2011/6110	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R	2006/2609	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5679	Not Controlled Action (Particular Manner)	Post-Approval
Vincent M1 and Enfield M5 4D Marine Seismic Survey	2010/5720	Not Controlled Action (Particular Manner)	Post-Approval
Warramunga Non-Inclusive 3D Seismic Survey	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
West Anchor 3D Marine Seismic Survey	2008/4507	Not Controlled Action (Particular Manner)	Post-Approval
West Panaeus 3D seismic survey	2006/3141	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone 3D MAZ Marine Seismic Survey	2011/6058	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2007/3941	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2008/4134	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
3D Seismic Survey	2008/4219	Referral Decision	Completed
Bianchi 3D Marine Seismic Survey, Carnavon Basin, WA	2013/7078	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
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
Rose 3D Seismic acquisition survey	2008/4220	Referral Decision	Completed
Stybarrow Baseline 4D Marine Seismic Survey (Permit Areas WA-255-P, WA-32-L, WA-	2008/4165	Referral Decision	Completed

Key Ecological Features

[[Resource Information](#)]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Ancient coastline at 125 m depth contour	North-west
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	North-west
Commonwealth waters adjacent to Ningaloo Reef	North-west
Continental Slope Demersal Fish Communities	North-west
Exmouth Plateau	North-west
Glomar Shoals	North-west
Perth Canyon and adjacent shelf break, and other west coast canyons	South-west
Wallaby Saddle	North-west
Western demersal slope and associated fish communities	South-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Dugong		
Dugong dugon		
Dugong [28]	Breeding	Known to occur
Dugong dugon		
Dugong [28]	Calving	Known to occur

Scientific Name	Behaviour	Presence
Dugong dugon Dugong [28]	Foraging (high density seagrass beds)	Known to occur
Dugong dugon Dugong [28]	Nursing	Known to occur
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Internesting buffer	Known to occur
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting buffer	Known to occur
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting buffer	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting buffer	Known to occur
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Seabirds		
Ardena pacifica Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Ardena pacifica Wedge-tailed Shearwater [84292]	Foraging (in high numbers)	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Foraging (in high numbers)	Known to occur

Scientific Name	Behaviour	Presence
Onychoprion fuscata Sooty Tern [82847]	Foraging	Known to occur
Pelagodroma marina White-faced Storm petrel [1016]	Foraging (in high numbers)	Known to occur
Puffinus assimilis tunneyi Little Shearwater [59363]	Foraging (in high numbers)	Known to occur
Sterna dougallii Roseate Tern [817]	Breeding	Known to occur
Sternula nereis Fairy Tern [82949]	Breeding	Known to occur
Thalasseus bengalensis Lesser Crested Tern [66546]	Breeding	Known to occur

Sharks

Rhincodon typus Whale Shark [66680]	Foraging	Known to occur
Rhincodon typus Whale Shark [66680]	Foraging (high density prey)	Known to occur

Whales

Balaenoptera musculus brevipinna Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevipinna Pygmy Blue Whale [81317]	Foraging	Known to occur
Balaenoptera musculus brevipinna 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 D Oil Pollution Emergency Plan



STYBARROW DECOMMISSIONING AND FIELD MANAGEMENT OIL POLLUTION EMERGENCY PLAN

REVISION RECORD					
Rev	Date	Description	Prepared by	Reviewed by	Approved by
1	270/07/2023	Issued for Assessment	Advisian	Hydrocarbon Spill Response	Environment Manager

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REVISION RECORD		
Rev	Date	Description
0	13/04/2022	Issued for Assessment
1	270/07/2023	Re-Issued for Assessment. Update to Woodside structure

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1 Introduction

1.1 Purpose

This Oil Pollution Emergency Plan (OPEP) has been developed to establish the processes and procedures within Woodside to respond to and effectively manage incidents that may occur during Stybarrow Decommissioning and Field Management activities within Production Licence WA-32-L, offshore Western Australia (WA).

This OPEP is an appendix to the *Stybarrow Decommissioning and Field Management Environment Plan* (EP) (Appendix D) and is required under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations (the OPGGS (Environment Regulations)) for approval to perform petroleum activities in Commonwealth waters.

1.2 Scope

This OPEP applies to Woodside activities associated with Stybarrow Decommissioning and Field Management.

This OPEP applies to oil spills resulting from activities associated with the Stybarrow Decommissioning and Field Management or operating under an instrument of the OPGGS Act.

Specifically in reference to oil spill preparedness, this OPEP contains:

- a summary description of the activity and locations (Section 3 of the EP)
- a list of the spill scenarios that may occur during the petroleum activities (Section 2.1)
- an overview of the operational net environmental benefit analysis (NEBA) in relation to the spill scenarios (Section 4)
- details associated with each of the response strategies (Section 3)
- an outline of activities associated with the response to an oil spill (Section 3)
- the First Strike Response Plan (**Appendix A – First Strike Plan**)

The spill scenarios listed in Table 2-1 may impact on WA State waters, therefore this plan considers the Western Australia State Hazard Plan – Maritime Environmental Emergencies (SHP-MEE) (Government of WA, 2021) and Offshore Petroleum Industry Guidance Note (IGN) on Marine Oil Pollution: Response and Consultation Arrangements (Department of Transport (DoT), 2020). Woodside acknowledges that as per the IGN, DoT will be the Controlling Agency in a State waters response (Refer to Section 1.5). Woodside will provide all necessary resources, including personnel and equipment, to support DoT's Incident Management Team (IMT) and response, as agreed during consultations with DoT. Woodside has access to staff for the Initial Personnel Requirements as outlined in Annexure 2 of the IGN. Refer to Appendix B – Western Australia Department of Transport Incident Management Team Coordination this plan for these requirements and the control and coordination/IMT structure that will be applied during a marine oil pollution response that impacts State waters.

This plan is to be reviewed and implemented in conjunction with the *Stybarrow Decommissioning and Field Management EP* (Section 3) Activity Description and Location.

The activity covered by this OPEP involves 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. This OPEP also covers ongoing field management activities (equipment monitoring and inspection). The Stybarrow Field is in 810-850 m water depth around 55 km north-west of Exmouth, WA. For a detailed description of the petroleum activities, refer to Section 3 of the EP.

1.3 Hydrocarbons and their Sources

The activities will involve the presence of support vessels in the operational area for the decommissioning and field management activities and thus presents a spill risk from a possible but unlikely vessel collision. A vessel collision has the potential to result in the rupture of a fuel tank and the release of marine diesel oil (MDO). The worst-case scenario is associated with the rupture of the largest fuel tank (1,000 m³ of MDO) of one of the project vessels.

Hydrocarbon properties are presented in Table 1-1.

Table 1-1: Chemical Properties of hydrocarbons

Hydrocarbon Type	API Gravity	Wax Content (%)	Pour Point (°C)	Asphaltene (%)	Specific Gravity	Viscosity (cP)
MDO ¹	36.4	0.05	-36	0.05	0.843	3.9 @ 20°C

¹ Data from SINTEF's Marine Diesel (IKU)

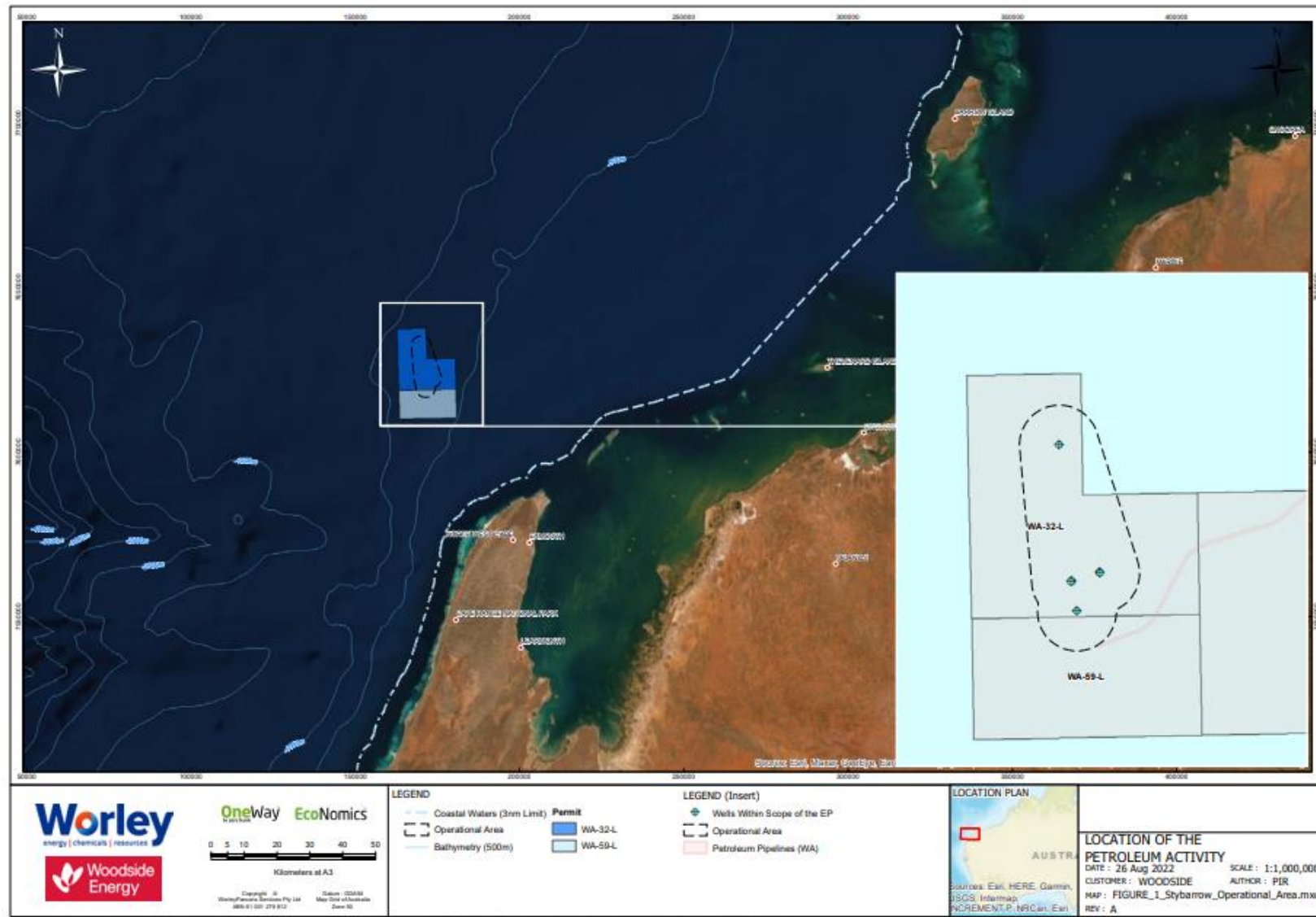


Figure 1-1: Stybarrow Decommissioning and Field Management Operational Area

1.4 Emergency Management and Oil Spill Response Documentation

Table 3-2 demonstrates the scope and content of oil spill related documents developed by Woodside. It excludes other tactical and industry plans, standard operating procedures and field guides prepared by DoT, Department of Biodiversity, Conservation and Attractions, Australian Maritime Oil Spill Centre (AMOSOC), Oil Spill Response Limited (OSRL), National Oceanic and Atmospheric Administration and IPIECA-International Association of Oil and Gas Producers available to Woodside to support oiled shoreline assessment, oiled wildlife response and waste management.

1.5 Oil Spill Response Control Agencies

During a spill response, there will be a 'Control Agency' and a 'Jurisdictional Authority' assigned to the incident for all spill response levels.

Definitions of a Control Agency and Jurisdictional Authority are as follows:

- Control Agency: the organisation assigned by legislation, administrative arrangements or within the relevant contingency plan, to control response activities to a maritime environmental emergency (AMSA, 2020). Control Agencies have the operational responsibility of response activities (AMSA, 2002) but may have arrangements in place with other parties to provide response assistance under their direction (AMSA, 2020).
- Jurisdictional Authority: the organisation which has responsibility to verify that an adequate spill response plan is prepared and, in the event of an incident, that a satisfactory response is implemented. The Jurisdictional Authority is also responsible for initiating prosecutions and the recovery of clean-up costs on behalf of all participating agencies.

The applicable Control Agency and Jurisdictional Authority is dependent on the location (Commonwealth vs State waters), type of activity (vessel based or petroleum activity) and the spill response level as shown in Table 1-2.

To aid in the determination of a vessel versus a facility spill, the following guidance is adopted:

- A vessel is a ship at sea to which the *Navigation Act 2012* applies.
- A facility is a petroleum facility as defined under the OPGGS Act, Volume 3, Schedule 3, Part 1, Clause 4 & Volume 2, Part 6.8, Section 640.

Table 1-2: Control Agencies and Jurisdictional Authorities for Oil Spill Response

Source	Location	Level	Hazard Management Agency/ Jurisdictional Authority	Control Agency	Incident Controller
Spill from facility including subsea infrastructure ¹ Note: pipe laying and accommodation vessels are considered a "facility" under Australian regulations	Commonwealth waters	1	NOPSEMA	Woodside	Person In Charge (PIC) with support from Onshore Team Leader (OTL)
		2/3	NOPSEMA	Woodside	Corporate Incident Management Team (CIMT) Incident Commander (IC)
	State waters	1	Department of Transport (DoT)	Woodside	CIMT IC
		2/3	DoT	DoT	DoT Incident Controller
	Within port limits	1	DoT	Woodside	CIMT IC
		2/3	DoT	DoT	DoT Incident Controller
Spill from vessel² Note: SOPEP should be implemented in conjunction with this document	Commonwealth waters	1	Australian Marine Safety Authority (AMSA)	AMSA	Vessel Master
		2/3	AMSA	AMSA	AMSA (with response assistance from Woodside)
	State waters	1	DoT	DoT	DoT Incident Controller
		2/3	DoT	DoT	DoT Incident Controller
	Within port limits	1	DoT	Port Authority	Port Harbour Master
		2/3	DoT	Port Authority/DoT	Port Harbour Master/DoT Incident Controller

1.5.1 Petroleum Activity Spill in Commonwealth Waters

Woodside holds the Control Agency role for its facility related spills within Commonwealth waters. Facility spills include vessels undertaking construction, decommissioning and pipelaying activities in Woodside's operational area. This definition of a 'facility' is defined by Schedule 3, Part 1, Clause 4 of the OPGGS Act 2006.

1.5.2 Vessel Spills in WA State Waters

For WA State waters, the DoT Chief Executive Officer is prescribed as the Hazard Management Agency (HMA) for marine oil pollution as per the WA *Emergency Management Act 2005* and Emergency Management

¹ Includes a 'Facility', such as a fixed platform, FPSO/FSO, MODU, subsea infrastructure, or a construction, decommissioning and pipelaying vessel. As defined by Schedule 3, Part 1, Clause 4 of the OPGGS Act 2006.

² Vessels are defined by Australian Government Coordination Arrangements for Maritime Environmental Emergencies (AMSA, 2017) as a seismic vessel, supply or support vessel, or offtake tanker.

Regulations 2006. The DoT manages the SHP – MEE (WA DoT, 2021) and is the Control Agency for all vessel-based spills in WA waters outside of a port proclaimed pursuant to the *Port Authorities Act 1999* (WA). For vessel-based spills within a port proclaimed pursuant to the *Port Authorities Act 1999* (WA), the relevant Port Authority or DoT may be the Control Agency.

1.5.3 Vessel Spills in Commonwealth Waters

AMSA is the Control Agency for any shipping sourced spill in Australian Commonwealth waters (AMSA, 2020). AMSA is the national shipping and maritime industry regulator and was established under the *Australian Maritime Safety Authority Act 1990*. AMSA manages the National Plan for Maritime Environmental Emergencies (AMSA, 2020) on behalf of the Australian Government, working with State and the Northern Territory governments, emergency services and private industry to maximise Australia's marine pollution response capability.

1.5.4 Cross Jurisdictional Spills

Cross Jurisdictional Petroleum Activity Spills

If a Marine Oil Pollution Incident enters, or has potential to enter, State waters, the DoT is the Hazard Management Agency (HMA) (DoT Chief Executive Officer or proxy). The Assistant Executive Director (or proxy) has been nominated by the HMA to perform the role of State Marine Pollution Coordinator (SMPC) (as prescribed in Section 1.3 of the SHP – MEE (WA DoT, 2021)) and DoT will take on the role as a Control Agency. The role of the SMPC is to provide strategic management of the incident response on behalf of the HMA.

Woodside will notify the DoT Maritime Environmental Emergency Response (MEER) unit as soon as reasonably practicable (within 2 hours of spill occurring) if an actual or impending spill may impact WA State waters. On notification, the HMA will activate their Maritime Environmental Emergency Coordination Centre and the DoT IMT. Woodside will work in partnership with DoT during such instances, as outlined within the DoT's Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (WA DoT, 2020).

Woodside will conduct initial response actions in State waters as necessary in accordance with its OPEP and continue to manage those operations until formal handover of incident control is completed. Appendix 1 in DoT's Offshore Petroleum Industry Guidance Note (WA DoT, 2020) provides a checklist for formal handover.

For a cross-jurisdictional response, there will be a Lead IMT (DoT or Woodside) for each spill response activity, with DoT's control resting primarily for State waters activities.

Appendix 2 in DoT's Offshore Petroleum Industry Guidance Note (WA DoT, 2020) provides guidance on the allocation of a Lead IMT to response activities for a cross-jurisdictional spill.

To facilitate effective coordination between the two Control Agencies and their respective IMT's, a Joint Strategic Coordination Committee (JSCC) will be established. The JSCC will be jointly chaired by the State Maritime Environmental Emergency Coordinator and Woodside's nominated Crisis Management Team (CMT) Leader and will comprise of individuals deemed necessary by the chairs to ensure an effective coordinated response across both jurisdictions.

For a cross-jurisdictional response, Woodside will be responsible for ensuring adequate resources are provided to DoT as Control Agency, initially 11 personnel to fill roles in the DoT IMT or FOB and operational personnel to assist with those response strategies where DoT is the Lead IMT. Concurrently DoT will also provide two of their personnel to the Woodside IMT. Woodside's CMT Liaison Officer and the Deputy Incident Controller are to attend the DoT Fremantle Incident Command Centre (ICC) as soon as possible after the formal request has been made by the SMPC. It is an expectation that the remaining initial cohort will attend the DoT Fremantle ICC no later than 8am on the day following the request being formally made to Woodside by the SMPC. Woodside personnel designated to serve in DoT's FOB will arrive no later than 24 hours after receipt of formal request from the SMPC.

Cross Jurisdictional Vessel Spills

For a large vessel spill (e.g. Level 2 and above) that crosses jurisdictions between Commonwealth and State waters, the Control Agency will remain with the original nominated agency or organisation unless otherwise

appointed through agreement between the HMA / Jurisdictional Authority of both waters. AMSA may request that DoT manage a vessel incident in Australian Commonwealth waters (Government of WA ,2021).

Woodside may be requested by the Control Agency to provide a first strike response and all necessary resources (including personnel and equipment) as a Supporting Agency.

1.6 Cost recovery

As required under Section 571(2) of the OPGGS Act 2006, Woodside has financial assurances in place to cover any costs, expenses and liabilities arising from carrying out its petroleum activities, including major oil spills. This includes costs incurred by relevant control agencies (e.g. DoT) and third-party spill response service providers.

2 Identified Risks

2.1 Spill Scenarios for the Stybarrow Decommissioning and Field Management Activities

The spill scenarios in which hydrocarbons may be released to the marine environment during the petroleum activities are provided in Table 2-1. The justification for selecting these spill scenarios is described in Section 8 of the EP.

Table 2-1: Hydrocarbon Spill Scenarios

Hydrocarbon	Activity	Scenarios	Volume (m ³)	Duration	Likelihood
MDO	Vessels required to perform petroleum activities	Vessel collision – which ruptures a MDO tank. One-time instantaneous release.	1000	Instantaneous	Highly Unlikely
MDO	Bunkering	Bunkering incident.	37.5	Instantaneous	Highly Unlikely

Section 8 of the EP details the risk assessment and management for each of these scenarios respectively, which is not repeated in this document. This includes:

- description of the spill scenario
- spill frequency
- hydrocarbon properties
- environment that may be affected (EMBA)
- risk analysis conclusion and ranking
- objectives for spill prevention
- control measures.

2.1.1 Diesel (Marine Diesel Oil)

Marine diesel is a mixture of volatile and persistent hydrocarbons with low proportions of highly volatile and residual components. In general, about 6% of the oil mass should evaporate within the first 12 hours (BP < 180 °C); a further 35% should evaporate within the first 24 hours (180 °C < BP < 265 °C); and a further 54% should evaporate over several days (265 °C < BP < 380 °C). Approximately 5% of the oil is shown to be persistent. The aromatic content of the oil is approximately 3%.

If released in the marine environment and in contact with the atmosphere (i.e. surface spill), approximately 41% by mass of this oil is predicted to evaporate over the first couple of days depending upon the prevailing conditions, with further evaporation slowing over time. The heavier (low volatility) components of the oil have a tendency to entrain into the upper water column due to wind-generated waves but can subsequently resurface if wind-waves abate. Therefore, the heavier components of this oil can remain entrained or on the sea surface for an extended period, with associated potential for dissolution of the soluble aromatic fraction.

2.2 Environment that May Be Affected

The EMBA for the worst-case spill from Stybarrow Decommissioning and Field Management activities is described in the EP. In defining the EMBA, a range of factors detailed in National Offshore Petroleum Safety and Environmental Management Authority Oil Pollution Risk Management Guidance Note A382148 (NOPSEMA, 2021) have been considered. Specifically, the size of the EMBA has been based upon the quantity of hydrocarbons, duration of discharge, concentration of hydrocarbons, film thickness of hydrocarbons that can result in ecological impacts, zone of spill response activities and the environmental conditions that contribute to the largest distance travelled by the hydrocarbon.

2.3 Response and monitoring priorities

During an oil spill it is not always feasible to protect all receptors. Prioritising receptors helps to aid decision-making in the preliminary stages of a response, so initial resources are used for best effect. For the purposes of this OPEP, priority areas refer to those locations with significant receptors and values that require protection from the impacts of a spill.

Results from the stochastic hydrocarbon spill modelling were compared against the location of key sensitive receptors with high conservation-valued habitat or species or important socio-economic/heritage value within the EMBA. Relevant values and sensitivities of the environment are described in Section 5 of the EP. The ranking of these sensitivities (also referred to as receptors) are listed, which is consistent with the rankings in *Provisions of Western Australian Marine Oil Pollution Risk Assessment – Protection Priorities: Assessment for Zone 2: Pilbara* (Advisian, 2017).

2.4 Spill modelling

2.4.1 Stochastic

Stochastic modelling for the Stybarrow Decommissioning and Field Management spill scenario was performed using a three-dimensional spill trajectory and weathering model, SIMAP (Spill Impact Mapping and Analysis Program). This model is designed to simulate the transport, spreading and weathering of specific oil types under the influence of changing meteorological and oceanographic forces. The modelling outputs do not represent the potential behaviour of a single spill (which would have a much smaller area of influence) but provides an indication of the probability of any given area of the sea surface being contacted by hydrocarbons above impact thresholds.

A total of 300 replicate simulations were completed for each of the scenarios to test for trends and variations in the trajectory and weathering of the spilled oil, with an even number of replicates completed over three seasons (Summer: October to March; transitional periods of April and September; Winter: May to August).

2.4.2 Modelling results

Table 2-2 are the worst-case volumes resulting from the deterministic modelling and have been used to determine appropriate level of response.

Table 2-2: Deterministic modelling results

Response parameter	Modelled result
	CS-01: hydrocarbon release due to vessel collision
Maximum continuous liquid hydrocarbon release rate and duration	Instantaneous release of 1000 m ³ of marine diesel
Maximum residual surface hydrocarbon after weathering	5% residual component of 50 m ³
Deterministic modelling results	
Minimum time to commencement of hydrocarbon accumulation at any shoreline receptor (at a concentration of 100 g/m ²)	<i>No contact at threshold</i>
Maximum cumulative hydrocarbon volume accumulated at any individual shoreline receptor (at a concentration of 100 g/m ²).	<i>No contact at threshold</i>
Maximum cumulative hydrocarbon volume accumulated across all shoreline receptors contacted by accumulated hydrocarbons (at a concentration of 100 g/m ²)	<i>No contact at threshold</i>

At the time of a spill, the CIMT has the following tools at its disposal to assess the oil spill scenario risk assessment, determine the environmental protection priorities and subsequent response needs for an emergency event related to the Stybarrow Decommissioning and Field Management activities.

NEBA

The NEBA response strategy evaluation process is a decision support tool used to help select the most appropriate response options that together make up the oil spill response strategies the IMT is to implement in a spill. Using the Strategic NEBA in the EP, the IMT has the foundation for preparing an Operational NEBA to inform response priorities.

WMAP

This Woodside map and geospatial platform provides base maps showing Woodside's assets and activity locations with the ability to activate layers (as required) which include environmental and cultural heritage sensitivities, oil spill response resources, logistics and infrastructure layers, metocean data, vessel locations etc. The software also has an inbuilt oil spill modelling 'Rapid Assessment Tool' (RAT) which uses Oilmap software to allow preliminary trajectory modelling to be undertaken during a response event.

Oil Spill Response Atlas (OSRA)-Web Map Application (WMA)

WA OSRA is a spatial database of environmental, logistical and oil spill response data. Using a GIS platform, OSRA displays datasets collated from a range of custodians, allowing decision-makers to visualise environmental sensitivities and response considerations in a selected location. OSRA-WMA allows the layers found in OSRA to be viewed via a secure portal from the DoT website and provides basic functional tools.

North West Cape Sensitivities Mapping

The purpose of this shoreline sectorisation was to outline sensitive resources at risk, describe a baseline using the systematic cause analysis technique, and outline important segment access information. The document describes localised environmental type (shoreline, substrate) and accessibility of shorelines and required permissions.

3 Applicable Response Strategies

The strategies selected during the NEBA process for the worst-case spill scenarios are summarised in Table 3-1. Further description of each strategy includes a risk assessment on performing it, the control options and a conclusion as to how the strategy demonstrates as low as reasonably practicable (ALARP) criteria and Woodside's acceptability criteria.

Table 3-1: Summarised Response Strategies for the Stybarrow Decommissioning and Field Management Spill Scenario

Response Strategy	Vessel based MDO Spill
Source Control – Vessel-based	Primary
Source Control – Subsea Intervention	x
Source Control – Relief Well	x
Source Control – Capping Stack	x
Source Control – Subsea First Response Toolkit (SFRT)	x
Monitor and Evaluate	Primary
Dispersant – Surface Application	x
Dispersant – Subsea Application	x
Containment and Recovery	x
Shoreline Protection	x [#]

Mechanical Dispersion	x
In-Situ Burning	x
Shoreline Clean-Up	x [#]
Natural Recovery	Primary
Environmental Monitoring	Primary
Oiled Wildlife Response	Primary*
Waste Management	Secondary

x Response strategy not applicable for spill scenario

No shoreline accumulation >100 g/m² predicted from spill modelling

* Potentially activated depending on reports and observations of Monitor and Evaluate

^ No floating surface hydrocarbons predicted above 50 g/m² (minimum thickness required to commence effective surface dispersant application or containment and recovery operations).

Each option has advantages and disadvantages with regard to effectiveness, operational constraints and environmental impacts. Consequently, spill response strategies need to be assessed for each case, taking into account the nature of the spill, oil spill trajectory modelling, the weather conditions, and the advantages and disadvantages of each response strategy.

Table 3-2: Summary of Relevant Response Plans

Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Operational Plans	<p>Lists the actions required to activate, mobilise and deploy personnel and resources to commence response operations.</p> <p>Includes details on access to equipment and personnel (available immediately) and steps to mobilise additional resources depending on the nature and scale of a release.</p> <p>Relevant operational plans will be initially selected based on the Oil Pollution First Strike Plan; additional operational plans will be activated depending on the nature and scale of the release.</p>	<p>CIMT: Operations and Logistics Sections for first strike activities.</p> <p>CIMT: Planning Section to help inform the IAP on resources available.</p>	<p>Locations from where resources may be mobilised.</p> <p>How resources will be mobilised.</p> <p>Details of where resources may be mobilised to and what facilities are required once the resources arrive.</p> <p>Details on how to implement resources to undertake a response.</p>	<p>Operational Monitoring</p> <p>Vessel Shipboard Oil Pollution Emergency Plan (SOPEP)</p> <p>Oiled Wildlife</p> <p>Scientific Monitoring</p>
Tactical Response Plans (TRPs)	<p>Provides options for response techniques in selected Response Protection Areas (RPAs). Provides site, access and deployment information to support a response at the location.</p>	<p>CIMT: Planning Section to help develop IAPs, and Logistics Section to assist with determining resources required.</p>	<p>Indicative response techniques.</p> <p>Access requirements and/or permissions.</p> <p>Relevant information for undertaking a response at that site.</p> <p>Where applicable, may include equipment deployment locations and site layouts.</p>	<p>See Appendix E of this document</p>
Support Plans	<p>Support Plans detail Woodside's approach to resourcing and the provision of services during a hydrocarbon spill response.</p>	<p>CIMT: Operations, Logistics and Planning Sections.</p>	<p>Strategy for mobilising and managing additional resources outside of Woodside's immediate preparedness arrangements.</p>	<p>Logistics Support Plan</p> <p>Aviation Support Plan</p> <p>Marine Support Plan</p> <p>Accommodation and Catering Plan – Australia</p>

Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
				Transport Management Plan – Australia Waste Management Plan – Australia Health and Safety Support Plan Hydrocarbon Spill Responder Health Monitoring Guideline People and Global Capability (Surge Labour Requirements) Support Plan (Land based) Security Support Plan Stakeholder Engagement Support Plan Guidance for Hydrocarbon Spill Claims Management Communications Support Plan – Australia IT Support Plan

4 Net Environmental Benefit Analysis and Decision-Making Criteria for Response Strategy Selection

For oil spill response, the Incident Action Plan (IAP) response strategies are identified through a process that involves reviewing key decision-making criteria, the outcomes of which are used as inputs to the Operational NEBA. This ensures the most effective response strategies with the least detrimental impacts can be selected and implemented.

The IMT must first gain situational awareness by obtaining answers to the following key questions, which are fundamental to any oil spill response:

- What type of oil has been released?
- What is the expected behaviour of the oil that has been released?
- What volume has been released?
- Is the source under control?
- Where is the oil going?
- What environmental receptors and sensitivities are in the path of the predicted oil trajectory?
- Can the oil be approached or are there safety concerns?
- Can the oil be contained?
- Can the oil be dispersed?
- Will shoreline impact occur, and clean-up be required?

To answer these questions, the Incident Commander must review key information such as engineering advice about the volume and characteristics of the oil released, oil spill trajectory modelling, oil spill tracker buoys, the weather forecast, Automatic Identification System (AIS) vessel feed, aircraft data feeds, operational reports from field teams and operational and environmental monitoring teams to determine presence and/or extent of environmental receptors, advice from the State Government Environmental Scientific Coordinator, any other external advice, the window of ecological sensitivity (Section 4.5 of EP), oil spill reference documents (as detailed in each response strategy within the EP) and any other Daily Field Reports.

The outcome of this data review step is then used to update the Operational NEBA, which assesses the impacts and risks of response strategy options on environmental sensitivities. The spill response risk assessment applies predefined assessment classifications (3P to 3N), as shown in Table 4-1, to assess the potential 'impact, for the receptor sensitivities for each response option. To aid interpretation where both positive and negative impacts have been indicated for a spill response in Table 4-2, cross-referencing potential impacts with the receptor's protection priority can be used to weight benefits and risks to receptors. Those with higher protection priorities can be weighted as of greater importance than risks to lower priorities for determining net environmental benefit.

Where a response has 'zero' scores for all receptors and sensitivities, this may still be assessed as being of net environmental benefit (or carried forward to ALARP assessment) based on potential for indirect (rather than direct) reduction in risk. For example, Monitor and Evaluate has no direct impact on the spill due to implementation of this strategy, but the situational awareness gained from the response allows proactive and effective application of other response strategies, thereby contributing to reducing risk to ALARP.

The NEBA Matrix (Table 4-2) prioritises environmental sensitivities and assesses the individual net effect each response option may have on it, allowing informed decisions to be made. If there are conflicting outcomes for a particular response option, the sensitivity with the higher priority becomes the preferred response option. A NEBA is a decision-making process and will ultimately result in a trade-off of priorities and response strategies.

It is possible for a response strategy to be used for one sensitivity, even if it has been identified that this response option may not benefit one or several other sensitivities. The final outcome of the response, however, should result in an overall net environment benefit. Spill response options identified by Woodside are outlined in Section 3. An evaluation of the impacts and risks of the spill response options is provided in Section 7 of the EP.

The CIMT will apply the Operational NEBA process to identify the response options that are preferred for the situation, oil type and behaviour, environmental conditions, direction of plume and protection priority of sensitive receptors.

The steps in the Operational NEBA aim to identify:

- key ecological values, environmental, socio-economic and cultural heritage receptors (**Error! Reference source not found.** herein and Section 4 of the EP) within the plume path and predicted EMBA, based on operational monitoring arrangements in Response Strategy 2 (Monitor and Evaluate)
- protection priorities of either High, Medium or Low in line with the rankings in *Provisions of Western Australian Marine Oil Pollution Risk Assessment – Protection Priorities: Assessment for Zone 2: Pilbara* (Advisian, 2017)
- receptors within the window of ecological sensitivity for the period of the oil spill
- response strategies to be included in the IAP work instruction
- new situational awareness information that becomes available from the range of operational monitoring arrangements in Monitor and Evaluate such as updated spill trajectory models, observations of oil on the water and shorelines, locations of sensitive receptors, effectiveness of implemented response strategies, Daily Field Reports, any updated advice from the Environmental Scientific Coordinator (nominated officer from the Department of Biodiversity Conservation and Attractions) and other external sources (such as consideration of recommendations from the WA Hazard Management Agency) for inclusion in daily updates of the Operational NEBA to optimise the IAP. Some sensitive receptors are mobile (such as fish, mammals, birds) and may move in and out of the predicted oil path on numerous occasions throughout the response, requiring frequent review of the NEBA table and selection of response techniques documented in IAPs by the IMT.

The Planning Section will supervise the development of the IAP with the CIMT. The Incident Commander authorises the IAP before releasing it to the Operations Section.

Table 4-1: Net Environmental Benefit Analysis Impact Categories Identifying Potential Change in Impact Due to Response Strategies, Relative to the Impact of the Spill

NEBA Categories		Degree of Impact	Potential Duration of Impact	Equivalent Woodside Severity Risk Matrix Consequence Level
Positive	3P	Major Likely to prevent: <ul style="list-style-type: none"> behavioural impact to biological receptors behavioural impact to socio-economic receptors, such as changes daily business operations, public opinion/behaviours (for example, avoidance of amenities such as beaches), or regulatory designations. 	Decrease in duration of impact by more than five years	N/A.
	2P	Moderate Likely to prevent: <ul style="list-style-type: none"> significant impact single phase of reproductive cycle for biological receptors, or detectable financial impact, either directly (such as loss of income) or indirect (such as via public perception), for socio-economic receptors. This level of negative impact is recoverable and unlikely to result in closure of business/industry in the region. 	Decrease in duration of impact by one to five years	N/A.
	1P	Minor Likely to prevent impact to: <ul style="list-style-type: none"> significant proportion of population or breeding stages, for biological receptors, or significant impact to the sensitivity of protective designation for socio-economic receptors; or significant long-term impact to business/industry. 	Decrease in duration of impact by several seasons (less than one year)	N/A.
	0	Non-mitigated spill impact No detectable difference to unmitigated spill difference		
Negative	1N	Minor Likely to result in: <ul style="list-style-type: none"> behavioural impact for biological receptors behavioural impact for socio-economic receptors, such as changes to daily business operations, public opinion/behaviours (such as avoidance of amenities such as beaches), or regulatory designations. [Note 1]	Decrease in duration of impact by several seasons (less than one year)	Measurable but limited impacts to the environment, where recovery of ecosystems function takes less than one year. Woodside Petroleum Risk Matrix Severity Level 2, Non-Material Risk.
	2N	Moderate Likely to result in: <ul style="list-style-type: none"> significant impact single phase of reproductive cycle for biological receptors, or detectable financial impact, either directly (such as loss of income) or indirect (such as via public perception), for socio-economic receptors. This level of negative impact is recoverable and unlikely to result in closure of business/industry in the region. 	Increase in duration of impact (one year to less than three years)	Substantial impacts to the environment, where recovery of ecosystem function takes between one to three years. Woodside Petroleum Risk Matrix Severity Level 3, Non-Material Risk.
	3N	Major Likely to result in impact to: <ul style="list-style-type: none"> significant proportion of population or breeding stages, for biological receptors, or significant impact to the sensitivity of protective designation for socio-economic receptors, or significant long-term impact to business/industry for socio-economic receptors. 	Increase in duration of impact (three years to more than ten years or unrecoverable)	Serious or severe impacts to the environment and where recovery of ecosystem function takes three years or more. Woodside Petroleum Risk Matrix Severity Level ≥4, Material Risk.

Note 1: Behavioural impacts tend to be short-term and limited in their impact (even on a regional scale). The maximum likely should be considered if a response strategy directly impacts behaviour that results in an impact to reproduction and/or the breeding population, such as failure of fish spawning aggregations, then score should be a 2 or 3 rather than 1.

Table 4-2: Operational Net Environmental Benefit Analysis – Response Strategy Selection

Sensitivity	Protection Priority	Seasonal presence on NWS												Response Strategy									
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Source Control	Monitor and Evaluate	Subsea Dispersant	Shoreline Protection	Shoreline Clean-Up	Natural Recovery	Environmental Monitoring	Oiled Wildlife Response	Waste Management	
Ecological																							
Whales	High (T, M)	N	N	N	N	N	N	Y	Y	Y	Y	N	N	2P	0	1N	0	0	0	0	0	0	0
Dugongs	High (M)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1N	0	0	0	0	0	0	0
Dolphins	High (M)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1N	0	0	0	0	0	0	0
Whale sharks	High (T, M)	N	N	Y	Y	Y	Y	N	N	N	N	N	N	2P	0	1N	0	0	0	0	0	0	0
Fishes (resident, demersal, pelagic)	High	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	2N	0	0	0	0	0	0	0
Turtles (foraging, interesting, nesting)	High (T, M)	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y	2P	0	1N	1P	1P	0	0	2P	0	
Migratory birds	Extreme (T, M)	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	2P	0	2P	1P	1P	0	0	2P	0	
Seabirds	Medium	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	2P	1P	0	0	0	2P	0	
Shorebirds	Medium	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	2P	1P	1P	0	0	2P	0	
Ecosystem																							
Coral spawning	Medium	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	2P	0	2N	0	0	0	0	0	0	0
Mangroves	Extreme	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1N	1P	2N	0	0	0	0	0
Coral reef	Medium	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	2N	0	0	0	0	0	0	0
Seagrasses	Medium	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1N	0	0	0	0	0	0	0
Sandy beaches	Low	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1P	1P	1P	0	0	0	1P	0
Rocky shores	Low	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1P	1P	0	0	0	0	0	0
Open waters	Low	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1N	0	0	0	0	0	0	0
Socio-economic																							
Tourism	Low	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1P	1P	1P	0	0	0	0	1P
Fisheries	Low	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	2N	0	0	0	0	0	0	0
Cultural Heritage	High	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2P	0	1P	1P	1P	0	0	0	0	1P
Response strategy provides net environmental benefit?														Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Response strategy feasible?														Yes	Yes	N/A	Potentially	Potentially	Yes	Yes	Yes	Yes	Potentially
Is response strategy recommended (and ALARP assessment required)?														Yes	Yes	N/A	Potentially	Potentially	Yes	Yes	Yes	Yes	Potentially

*Protection priority: This ranking is based on a combination of factors, including the likelihood of impact (time of year) and severity of impact (type of exposure to the sensitivity, ranking of the sensitivity (Advisian, 2017) and recovery time after exposure to hydrocarbons).

NA: Modelling predicted no shoreline accumulation for any season at or above the low threshold (10 g/m²) (RPS, 2022).

Shoreline response: Where shoreline clean-up has been given a negative score, this indicates use of equipment, machinery and personnel in that environment is likely to have negative effect, potentially causing more damage and prolonging the recovery and environmental benefit to that sensitivity.

5 Response

5.1 Incident Management Team Briefing Documents and Task Checklists

The purpose of the CIMT is to gain control of an incident or event and bring it to a safe resolution while minimising the impact on personnel, the environment, assets and reputation. The key to controlling an incident is successful transition from an initial reactive mode to a proactive planning mode. This is achieved through a series of iterative stages that create and refine an IAP.

The Stybarrow Decommissioning and Field Management – First Strike Plan is listed in Appendix A of this document.

The First Strike Plan provides guidance to the Woodside CIMT in the first 24 hours of the spill to respond to a loss of hydrocarbons.

After 24 hours, the Woodside CIMT will further develop Incident Action Plans and Operational NEBAs, which are described further in Section 3.2.

The First Strike Plan acts as the IAP for the initial response (within the first 24 hours of the incident) and is used and updated until Planning prepares the first IAP that is approved by the CIMT Leader. This checklist also acts as a permanent record of the initial response to the incident.

The roles and responsibilities for each CIMT position are described in Woodside's *Incident and Crisis Management Procedure* and position-specific *Duty Cards*. Initial notifications and response actions are detailed within the Stybarrow Decommissioning and Field Management First Strike Plan included herein at Appendix A.

6 Response Resources

6.1 Oil Spill Response Agencies

Woodside maintains contracts with a number of Oil Spill Response Organisations (OSROs). These OSROs have capability to provide technical specialists to supplement the Woodside CIMT if required. OSRO resources also include trained personnel to lead Field Response Teams and provide access to industry response equipment. The main relationships are detailed in the following sub-sections and contact details are included in the First Strike Plan in Appendix A.

6.1.1 AMOSC

Woodside is a Member Company of AMOSC and as such has access to AMOSC's Level 2/3 equipment and personnel as outlined in the AMOSPlan.

AMOSC has contracts with all its member companies to enable the immediate release of Core Group personnel to be made available for any Woodside requirements, as outlined in Woodside' Master Service Contract and Principle and Agency Agreement with AMOSC.

The mutual aid arrangements that AMOSC operates under are collaborated under the AMOSPlan. This provides the mechanism for members of AMOSC to access oil spill response capability of other members. To further enhance the mutual aid arrangements Woodside, Santos, Chevron, and Jadestone have signed a memorandum of understanding (MoU) that defines the group's mutual aid arrangements. Under this MoU, Woodside, Santos, Chevron, and Jadestone have agreed to use their reasonable endeavours to assist in the provision of emergency response services, personnel, consumables and equipment.

6.1.2 Oil Spill Response Limited (OSRL)

Woodside is a member of the OSRL group. OSRL have capacity to mobilise additional equipment and personnel to Western Australia from their Singapore location. Only nominated Woodside personnel may request the assistance of OSRL via the CIMT Leader under OSRL's Service Level Agreement (SLA).

OSRL also has a Memorandum of Understanding (MoU) with AMOSC, and OSRL may also be activated by AMOSC to provide resources to AMOSC to respond to a situation. Following initial spill notification, OSRL may be mobilised if required within 8 hours.

Oil spill response equipment maintained by AMOSC (Exmouth, Fremantle and Geelong) and OSRL is available to Woodside during a spill response as part of contractual arrangements in place with these agencies. A complete list of equipment maintained by Woodside's OSRA, including stockpiles in Exmouth and Dampier from the MOSES database (DoT; equipment owners include AMSA, DoT and other titleholders) is provided in **Appendix C –**.

6.1.3 Marine Spill Response Corporation

For protracted response operations, Woodside has an agreement in place with Marine Spill Response Corporation (MSRC), a US-based industry-owned OSRO, for the provision of up to 16 specialist response personnel.

6.2 Technical Support (Environmental Monitoring)

Woodside maintains emergency response contracts for the provision of environmental monitoring (operational and scientific monitoring) including water quality monitoring for subsea dispersant injection. Contact details are included in the First Strike Plan in Appendix A.

6.3 General Support

Woodside has arrangements in place and access to providers to supply personnel as required to populate response teams. Woodside has tested these arrangements and considers that personnel for shoreline response operations can be sourced to and maintained for the full duration of response to worst-case spill scenario including redundancy, rostering, shift coverage, and rotation for maintaining field capability for the duration of the response. Woodside will mobilise shoreline crews at the direction of WA DoT, and where possible prior to the predicted arrival of hydrocarbons. These crews will focus on pre-cleaning beach areas (e.g., removing debris such as seaweed to areas above the high tide mark) and establishing staging areas to enable a more efficient response when hydrocarbons are arriving ashore.

During the first strike response phase, Woodside will rely on the skilled personnel (i.e., Woodside's Burrup Response Team, AMOSC Core Group, OSRL) to supervise response crews. In addition, personnel from the National Response Team (NRT) will be mobilised. Pending international travel restrictions due to COVID-19 pandemic, OSRL may also supply a selection of ground staff who have the practical skills and experience to assist and support Woodside during a spill response.

All labour-hire or internal personnel not trained in oil spill response would receive role-specific on-the-job training prior to undertaking response operations. Training would be ongoing throughout the response operation.

Woodside has standing contract with labour-hire companies to enable access to a work force that have experience and understanding of HSEQ requirements and remote / regional working with appropriate clearance checks for onsite work.

6.4 Spill Response Logistics

A response to a worst-case discharge event will require a large number of equipment and personnel to be deployed and accommodated in multiple locations. Coordination of these aspects of the response will be the responsibility of the Logistics section in the IMT. Woodside has a number of existing arrangements for the

storage and transport of equipment in and around Exmouth and Dampier, which will be initially used in a response. These arrangements include agreements with logistics providers for air, marine and land.

The current facilities in Exmouth can be supplemented by regional resources within appropriate timeframes for the response. Regional locations such as Onslow, Karratha and Port Headland are equipped to manage the logistical arrangements for construction, mining and petroleum projects, which are similar in scale to a large-scale spill response. Woodside maintains a supply base in Dampier, which is immediately available to support response operations. These resources involve the movement of personnel, freight and equipment over large distances.

Woodside has internal resources and utilises third-party logistics providers for movements of freight from overseas locations by air or sea. Woodside along with the specialist contractors, are highly experienced in procurement and supply chain management for large scale projects and ongoing offshore operational activities. These skills are directly transferable to a spill response.

Road transportation of personnel will be by hire cars (for team leaders, SCAT teams, small teams) and by charter buses for large movements of teams such as shoreline responders. Woodside has arrangements in place with multiple service providers that are based in Exmouth and Karratha that can call on additional resources regionally as well as other regional providers. Regional providers can supplement the Exmouth/Karratha arrangements within 2-3 days.

Freight logistics by road will utilise existing local contracts and other local operators supplemented by larger regional providers. Woodside has existing arrangements in place for large scale freight movements by road in the North West.

Accommodation is likely to be a constraint in the response as the lack of suitable accommodation may restrict the numbers of response personnel that could be brought into the region. There is a variety of accommodation options in Exmouth ranging from hotel/motel, backpacker, holiday home rental and caravan and camping sites. This can be supplemented by fly-in-fly-out (FIFO) arrangements with mine camps, accommodation and aerodromes within the iron ore side of the business.

Dampier and Karratha currently have additional accommodation with large accommodation villages (i.e., Gap village) previously used for large construction projects available. These facilities can be used to accommodate responders to address shorelines in the Onslow – Dampier region if required or as a base for long commute by road or air to locations further south.

6.5 Response resource status

Woodside maintains databases of available response equipment and dispersant stockpiles which are updated on a monthly basis as part of the Hydrocarbon Spill Preparedness 'Internal Control Environment' (ICE) assurance process.

The Hydrocarbon Spill Response competency dashboard records the number of trained and competent responders that are available across Woodside, and some external providers, to participate in a response.

This number varies depending on expiry of competency certificates, staff attrition, internal rotations, leave and other absences. As such the Dashboard is designed to identify the minimum manning requirements and to identify sufficient redundancy to cater for the variances listed above.

6.6 Vessel Support

Woodside maintains an integrated fleet of vessels which are suited to offshore response activities and maintains a contract for provision of a monthly report on the availability and status of suitable emergency vessels and equipment for offshore response and source control operations. The report identifies suitable vessels including those that have an approved Safety Case for working in Australia and those closest to the incident location.

Port facilities at Exmouth, Onslow and Dampier will be used throughout the response. Woodside has access to a supply base in Dampier, which is immediately available to support response operations. A logistics plan will be developed by the IMT with a look ahead to replace or supplement vessels during the response operations to maintain the operational capability.

There may be circumstances where additional support vessels may be required to assist with spill response, e.g., deployment of equipment for an inshore response on North West Cape or transportation of equipment and people to offshore installations or island locations. Woodside monitors suitable vessel availability on a monthly basis. Requests for offshore vessel support can also be made by AMSA. The marine response strategies outlined in this plan can be performed independently or concurrently. In a Level 2/3 spill response, marine strategies are expected to be performed concurrently. During a response, if the CIMT determines that additional vessels are required, Woodside can source them through supplier contracts or through vessels of opportunity available on local charter market in Exmouth or Onslow.

6.7 State and National Resources

In accordance with the State Hazard Plan – Maritime Environmental Emergency (SHP-MEE), and following consultation with the WA DoT, additional personnel to assist with labour intensive aspects of a response (if required) may be sourced through the State Combat Committee (Executive Advisory Group). Depending on the level of response required, sources of labour may include the local shire, DBCA and AMSA.

Under the National Plan, a National Response Team (NRT), comprising experienced personnel from operator to senior spill response manager level from Commonwealth/State/NT agencies, industry and other organisations, has been developed.

The services of the NRT will be obtained through the Environment Protection Group (EPG) and AMSA, which has made arrangements with the respective government and industry agencies, for the release of designated personnel for oil spill response activities. These services will be activated when it is assessed that an oil spill incident exceeds the resource availability at the state level.

During a National Plan incident, the Woodside CIMT or the State Marine Pollution Controller appointed by a Control Agency may submit a request to AMSA for personnel from other States/Territories to become part of the Incident Management Team or the incident response team.

A request should be made initially through the Environment Protection Duty Officer via the Emergency Response Centre on 1800 641 792 or 02 6230 6811. This request must be followed by written confirmation within three (3) hours of the verbal request.

The following information will be provided when making such a request:

- Roles or skills required (e.g., Planning Officer, Aerial Observer);
- Number of personnel required to fill each role;
- Contact name, address, and time of where personnel are to initially report; and
- Brief overview of the work to be undertaken.

Suitable personnel will then be selected by AMSA from the National Response Team or the National Response Support Team (NRST), unless special circumstances exist.

7 References

Advisian (2017). Provision of Western Australian Marine Oil Pollution Risk Assessment – Protection Priorities: Protection Priority Assessment for Zone 2: Pilbara – Final Report. Report No: 301320-09591-EN-REP-0003 – DOT307215. Prepared for Western Australian Department of Transport. Accessed 12 October 2021.

Australian Maritime Safety Authority (AMSA) (2020). National Plan for Maritime Environmental Emergencies. AMSA, Canberra, Australian Capital Territory. Accessed 16th March 2022 - <https://www.amsa.gov.au/sites/default/files/amsa-496-national-plan.pdf>.

AMSA (2002). Intergovernmental agreement on the National Plan to combat pollution of the sea by oil and other noxious and hazardous substances. AMSA, Canberra, Australian Capital Territory. Accessed 16th March 2022 - <https://www.amsa.gov.au/about/who-we-work/intergovernmental-agreement-national-plan-combat-pollution-sea-oil-and-other>

Department of Transport (DoT). (2020). Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements. Accessed 12 October 2021 at

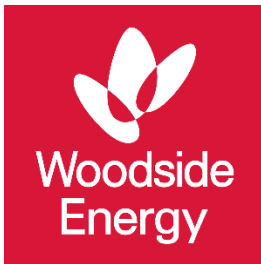
https://www.transport.wa.gov.au/mediaFiles/marine/MAC_P_Westplan_MOP_OffshorePetroleumIndGuidance.pdf

Government of Western Australia. (2021). State Hazard Plan – Marine Environmental Emergencies. Department of Transport, Perth, Western Australia. Accessed 15 February 2022-
https://www.transport.wa.gov.au/mediaFiles/marine/MAC_P_StateHazardPlanMaritimeEnviroEmergMEE.pdf

NOPSEMA (2021). Oil Pollution Risk Management Guidance Note, Document No. N-04750-GN1488 A382148.

RPS (2022). BHP Stybarrow Oil Spill Modelling report, MAQ1102J Rev 0

Appendix A – First Strike Plan



Stybarrow Decommissioning and Field Management – Oil Pollution First Strike Plan

Corporate HSE

Hydrocarbon Spill Preparedness

June 2023

Revision 0

Control Agencies and Incident Controllers

Source	Location	Level	Control Agency	Incident Controller
Spill from facility including subsea infrastructure Note: pipe laying and accommodation vessels are considered a "facility" under Australian regulations	Commonwealth waters	1	Woodside	Person In Charge (PIC) with support from Onshore Team Leader (OTL)
		2/3	Woodside	Corporate Incident Management Team (CIMT) Incident Commander (IC)
	State waters	1	Woodside	CIMT IC
		2/3	Department of Transport (DoT)	DoT Incident Controller
	Within port limits	1	Woodside	CIMT IC
		2/3	DoT	DoT Incident Controller
Spill from vessel Note: SOPEP should be implemented in conjunction with this document	Commonwealth waters	1	Australian Marine Safety Authority (AMSA)	Vessel Master
		2/3	AMSA	AMSA (with response assistance from Woodside)
	State waters	1	DoT	DoT Incident Controller
		2/3	DoT	DoT Incident Controller
	Within port limits	1	Port Authority	Port Harbour Master
		2/3	Port Authority/ DoT	Port Harbour Master/ DoT Incident Controller

Spills in State/Port Waters

As detailed in the table above, in the event of a hydrocarbon spill (hereafter 'spill') where Woodside Energy Ltd ('Woodside') is the responsible party and the spill may impact State waters and shorelines, Woodside (or the Vessel Master) will commence the initial response actions and notify the Western Australian Department of Transport (DoT). In the event that Woodside is the responsible party for a spill that occurs within port limits, Woodside will notify the Port Authority for all spills, and also notify DoT for Level 2 and 3 spills.

Initially Woodside will be required to make available an appropriate number of suitably qualified persons to work in the DoT Incident Management Team (IMT) (

[Annex 6](#) – Woodside Liaison Officer Resources to DoT). DoT/ Port Authority's role as the Controlling Agency in State waters/ within port limits does not negate the requirement for Woodside to have appropriate plans and resources in place to adequately respond to a marine hydrocarbon spill incident in State Waters/ within port limits or to commence the initial response actions to a spill prior to DoT establishing incident control in line with DoT *Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements* (July 2020) (Guidance Note). Cost recovery arrangements for offshore marine pollution incidents (MOP) are in accordance with Section 9 of the Guidance Note:

https://www.transport.wa.gov.au/mediaFiles/marine/MAC_P_Westplan_MOP_OffshorePetroleumIndGuidance.pdf

Woodside's Incident Management Structure for a hydrocarbon spill, including Woodside Liaison Officer's command structure within DoT can be seen at [Annex 5](#) – Woodside Incident Management Structure.

The coordination structure for a concurrent hydrocarbon spill in both Commonwealth and State waters/ shorelines is shown in

[Annex 4](#) – Coordination structure for a concurrent hydrocarbon spill in both Commonwealth and State waters/shorelines.

Response Process Overview

For guidance on credible scenarios and hydrocarbon characteristics, refer to APPENDIX A								
ALL INCIDENTS	<p>Notify the Woodside Communication Centre (WCC) on: 1300 833 333, +61 8 9348 7184 / 4624 or sat phone +881 632 410 392</p>							
	<p>Incident Commander or delegate to make relevant notifications in Table 1-1 of this Oil Pollution First Strike Plan.</p>							
LEVEL 1	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #0066b3; color: white;">FACILITY INCIDENT</th> <th style="background-color: #cc0000; color: white;">VESSEL INCIDENT</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e6f2ff;"> <p>Coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan.</p> <p>Remember to download each Operational Plan.</p> </td> <td style="background-color: #ffe6e6;"> <p>Notify AMSA or Port Authority (if within port limits) and coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan</p> <p>Remember to download each Operational Plan.</p> </td> </tr> </tbody> </table>	FACILITY INCIDENT	VESSEL INCIDENT	<p>Coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan.</p> <p>Remember to download each Operational Plan.</p>	<p>Notify AMSA or Port Authority (if within port limits) and coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan</p> <p>Remember to download each Operational Plan.</p>			
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<p>If the spill escalates such that the site cannot manage the incident, inform the WCC on: 1300 833 333, +61 8 9348 7184/ 4624 or sat phone +881 632 410 392 and escalate to a level 2/3 incident.</p>								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #0066b3; color: white;">FACILITY INCIDENT</th> <th style="background-color: #cc0000; color: white;">VESSEL INCIDENT</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e6f2ff;"> <p>Handover control to CIMT and notify DoT or Port Authority (if within port limits)</p> </td> <td style="background-color: #ffe6e6;"> <p>Handover control to AMSA or Port Authority (if within port limits) and stand up CIMT to assist.</p> </td> </tr> <tr> <td style="background-color: #e6f2ff;"> <p>Commence quick revalidation of the recommended strategies on Table 2-1 taking into consideration seasonal sensitivities and current situational awareness.</p> <p>Commence validated strategies.</p> </td> <td style="background-color: #ffe6e6;"> <p>If requested by AMSA/Port Authority:</p> <p>Commence quick revalidation of the recommended strategies on Table 2-1 taking into consideration seasonal sensitivities and current situational awareness.</p> <p>Commence validated strategies.</p> </td> </tr> <tr> <td style="background-color: #e6f2ff;"> <p>Create an Incident Action Plan (IAP) for all ongoing operational periods.</p> <p>The content of the IAP should reflect the selected response strategies based on current situational awareness.</p> <p>For the Strategic Net Environmental Benefit Analysis (NEBA) see the Stybarrow Decommissioning and Field Management Environment Plan</p> </td> <td style="background-color: #ffe6e6;"> <p>If requested by AMSA/Port Authority:</p> <p>Create an IAP for all ongoing operational periods.</p> <p>The content of the IAP should reflect the selected response strategies based on current situational awareness.</p> <p>For the Strategic Net Environmental Benefit Analysis (NEBA) see the Stybarrow Decommissioning and Field Management Environment Plan</p> </td> </tr> </tbody> </table>	FACILITY INCIDENT	VESSEL INCIDENT	<p>Handover control to CIMT and notify DoT or Port Authority (if within port limits)</p>	<p>Handover control to AMSA or Port Authority (if within port limits) and stand up CIMT to assist.</p>	<p>Commence quick revalidation of the recommended strategies on Table 2-1 taking into consideration seasonal sensitivities and current situational awareness.</p> <p>Commence validated strategies.</p>	<p>If requested by AMSA/Port Authority:</p> <p>Commence quick revalidation of the recommended strategies on Table 2-1 taking into consideration seasonal sensitivities and current situational awareness.</p> <p>Commence validated strategies.</p>	<p>Create an Incident Action Plan (IAP) for all ongoing operational periods.</p> <p>The content of the IAP should reflect the selected response strategies based on current situational awareness.</p> <p>For the Strategic Net Environmental Benefit Analysis (NEBA) see the Stybarrow Decommissioning and Field Management Environment Plan</p>	<p>If requested by AMSA/Port Authority:</p> <p>Create an IAP for all ongoing operational periods.</p> <p>The content of the IAP should reflect the selected response strategies based on current situational awareness.</p> <p>For the Strategic Net Environmental Benefit Analysis (NEBA) see the Stybarrow Decommissioning and Field Management Environment Plan</p>
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1. Notifications

The Incident Controller or delegate must ensure the below notifications (Table 1-1) are completed within the designated timeframes.

For spills from a vessel, relevant notifications must be undertaken by a Woodside representative.

Table 1-1: Notifications

In the event of an incident between campaign vessels, also activate relevant vessel Emergency Response Plans and/or Bridging Documents								
Timing	By	To	Name	Contact	Instruction	Form	Complete? (✓)	
NOTIFICATIONS FOR ALL LEVELS OF SPILL								
Immediately	Offshore Installation Manager (OIM) or Vessel Master	Woodside Communication Centre (WCC)	CIMT Incident Commander (IC)	Tel: 1300 833 333 Tel: +61 893 487 184/ 4624 Sat phone: +881 632 410 392	Verbally notify WCC of event and estimated volume and hydrocarbon type.	Verbal		
Within 2 hours	Woodside Site Rep (WSR)	National Offshore Petroleum Safety Environmental Management Authority (NOPSEMA ³)	Incident notification office	Tel: 1300 674 472	Verbally notify NOPSEMA for spills >80L. Record notification using Initial Verbal Notification Form or equivalent and send to NOPSEMA as soon as practicable (cc to NOPTA and DMIRS).	Link		
Within 3 days	WSR				Provide a written NOPSEMA Incident Report Form as soon as practicable (no later than 3 days after notification) (cc to NOPTA and DMIRS)	Link		
					NOPSEMA	submissions@nopsema.gov.au		
					NOPTA	resources@nopta.gov.au		
				DMIRS	petroleum.environment@dmirs.wa.gov.au			
As soon as practicable	CIMT IC or Delegate	Woodside	Environment Unit Leader	As per roster	Verbally notify Environment Unit Leader of event and seek advice on relevant performance standards from EP	Verbal		
Within 2 hours of becoming aware of a marine oil pollution incident (MOP) that occurs in or may impact state waters	CIMT IC or Delegate	WA Department of Transport	DoT Maritime Environmental Emergency Response Unit (MEER) Duty Officer	Tel: +61 8 9480 9924	Verbally notify DoT MEER Duty Officer that a spill has occurred and, if required, request use of equipment stored in Karratha/Fremantle. Follow up with a written Marine Pollution Report (POLREP) as soon as practicable following verbal notification. Additionally, DoT to be notified if spill is likely to extend into WA State waters. Request DoT to provide Liaison to Woodside CIMT.	Link		
As soon as practicable	CIMT IC or Delegate	Department of Climate Change, Energy, the Environment and Water (DCCEEW) Director of National Parks	Marine Park Compliance Duty Officer	Tel: +61 419 293 465	The Marine Park Compliance Duty Officer is notified in the event of oil pollution within a marine park, or where an oil spill response action must be taken within a marine park, so far as reasonably practicable, prior to response action being taken. This notification should include: <ul style="list-style-type: none"> • titleholder details • time and location of the incident • proposed response arrangements and locations as per the OPEP • contact details for the response coordinator • confirmation of access to relevant monitoring and evaluation reports when available. 	Verbal		
As soon as practicable if there is potential for	CIMT IC or Delegate	WA Department of	Duty Officer	Tel: +61 8 9219 9108	Phone call notification	Verbal		

³ Notification to NOPSEMA must be from a Woodside Representative.

oiled wildlife or the spill is expected to contact land or waters managed by WA Department of Biodiversity, Conservation and Attractions		Biodiversity, Conservation and Attractions (DBCA)					
As soon as practicable	Public Information	Relevant persons	To be determined	To be determined	Should it be identified that additional persons such as, but not limited to, commercial fishers, tourism operators or relevant cultural authorities may be affected, Woodside would, at the relevant time, engage with these parties as appropriate. Relevant persons/ organisations will be reassessed throughout the response period.	Verbal initially	
ADDITIONAL NOTIFICATIONS TO BE MADE ONLY IF SPILL IS FROM A VESSEL							
Without delay as per protection of the Sea Act, part II, section 11(1)	Vessel Master	Australian Maritime Safety Authority (AMSA)	Response Coordination Centre (RCC)	Tel: 1800 641 792 Tel: +61 2 6230 6811	Verbally notify AMSA RCC of the hydrocarbon spill. Follow up with a written Marine Pollution Report (POLREP) as soon as practicable following verbal notification.	Link	
ADDITIONAL LEVEL 2/3 NOTIFICATIONS							
As soon as practicable	CIMT IC or Delegate	Australian Marine Oil Spill Centre (AMOSOC)	AMOSOC Duty Manager	Tel: +61 438 379 328	Notify AMOSC that a spill has occurred and follow-up with an email from the CIMT IC/ CIMT Deputy IC/ CMT Leader to formally activate AMOSC. Determine what resources are required consistent with the AMOS Plan and detail in a Service Contract that will be sent to Woodside from AMOSC upon activation.	Link	
As soon as practicable	CIMT IC or Delegate	Oil Spill Response Limited (OSRL)	OSRL Duty Manager	Tel: +65 6266 1566	Contact OSRL Duty Manager and request assistance from technical advisor in Perth. Send the completed notification form to OSRL as soon as practicable.	Link	
					For mobilisation of resources, send the Mobilisation Form to OSRL as soon as practicable. The mobilisation form must be signed by a nominated callout authority from Woodside. OSRL can advise the names on the call out authority list, if required.	Link	
As soon as practicable if extra personnel are required for incident support	CIMT IC or Delegate	Marine Spill Response Corporation (MSRC)	MSRC Response Manager	Tel: +1 732 417 0175 Tel: +1 703 326 5609	Activate the contract with MSRC (in full) for the provision of up to 30 personnel depending on what skills are required. Please note that provision of these personnel from MSRC are on a best endeavours basis and are not guaranteed.	Verbal	

2. Response techniques

Table 2-1: Response techniques

Technique	Spill type Vessel (MDO)	Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
Operational monitoring – tracking buoy (OM02)	Yes	ALL	If a vessel is on location, consider the need to deploy the oil spill tracking buoy. If no vessel is on location, consider the need to mobilise oil spill tracking buoys from the King Bay Supply Base (KBSB) Stockpile. If a surface sheen is visible from the facility, deploy the satellite tracking buoy within two hours.	Operations	DAY 1: Tracking buoy deployed within 2 hours.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk (OM02) of The Operational Monitoring Operational Plan. Deploy tracking buoy in accordance with Link .
Operational monitoring – predictive modelling (OM01)	Yes	ALL	Undertake initial modelling using the Rapid Assessment Oil Spill Tool and weathering fate analysis using Automated Data Inquiry for Oil Spills (ADIOS) or refer to the hydrocarbon information in Appendix A .	Situation or Environment	DAY 1: Initial modelling within 6 hours using the Rapid Assessment Tool.	Predictive Modelling of Hydrocarbons to Assess Resources at Risk (OM01 of The Operational Monitoring Operational Plan). Link
	Yes	ALL	Send Oil Spill Trajectory Modelling (OSTM) form (Appendix B, Form 7) to RPS Response (rpsresponse@rpsgroup.com).	Situation	DAY 1: Detailed modelling within 4 hours of RPS Response receiving information from Woodside.	<i>Planning to download immediately and follow steps</i>
Operational monitoring – aerial surveillance (OM02)	Yes	ALL	Instruct Aviation Unit Leader to commence aerial observations in daylight hours. Aerial surveillance observer to complete log in Appendix B Form 8 .	Logistics – Aviation	DAY 1: 2 trained aerial observers. 1 aircraft available. Report made available to the IMT within 2 hours of landing after each sortie.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk (OM02 of The Operational Monitoring Operational Plan). Link <i>Planning to download immediately and follow steps</i>
Operational monitoring – satellite tracking (OM02)	Yes	ALL	The Situation Unit Leader should be instructed to stand up Kongsberg Satellite Services (KSAT) to provide satellite imagery of the spill (emergency@ksat.no , +4777661300).	Situation	DAY 1: Service provider will confirm availability of an initial acquisition within 2 hours. Data received to be uploaded into Woodside Common Operating Picture.	
Operational monitoring – monitoring hydrocarbons in water (OM03)	Yes	ALL	Consider the need to mobilise resources to undertake water quality monitoring (OM03).	Planning or Environment	DAY 3: Service provider deploy resources within 3 days: - 3 specialists in water quality monitoring - 2 monitoring systems and ancillaries - 1 vessel for deploying the monitoring systems with a dedicated winch, A-frame or Hiab and ancillaries to deploy the equipment. Daily fluorometry reports will be provided to IMT.	Detecting and Monitoring for the Presence and Properties of Hydrocarbons in the Marine Environment (OM03 of The Operational Monitoring Operational Plan). Link <i>Planning to download immediately and follow steps</i>
Operational monitoring – pre-emptive assessment of receptors at risk (OM04)	Yes	ALL	Consider the need to mobilise resources to undertake pre-emptive assessment of sensitive receptors at risk (OM04).	Planning or Environment	Within 2 days of impacts predicted by OM01/02/03, and in agreement with WA DoT (for Level 2/3 incidents), deployment of 2 specialists from resource pool in establishing the status of sensitive receptors	Pre-emptive Assessment of Sensitive Receptors (OM04 of The Operational Monitoring Operational Plan). Link <i>Planning to download immediately and follow steps</i>
Operational monitoring – shoreline assessment (OM05)	Yes	ALL	Consider the need to mobilise resources to undertake shoreline assessment surveys (OM05).	Planning or Environment	Within 2 days of impacts predicted by OM01/02/03, and in agreement with WA DoT (for Level 2/3 incidents), deployment of 1 specialist in SCAT for each RPA	Shoreline Assessment (OM05 of The Operational Monitoring Operational Plan). Link

Technique	Spill type Vessel (MDO)	Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
						<i>Planning to download immediately and follow steps</i>
Surface dispersant	No	N/A	Surface dispersant application is also not deemed to be a feasible response technique for spills of highly volatile hydrocarbons such as MDO as it is prone to rapid spreading, thinning and evaporation. Dispersant droplets pass through thin surface films without binding to the hydrocarbon and thus its use would unnecessarily introduce additional chemical substances to the marine environment and increase entrained hydrocarbons. Dispersant use is therefore not considered to provide a net environmental benefit.			
Containment and recovery	No	N/A	Modelling does not predict floating hydrocarbons at minimum threshold required for feasible deployment of containment and recovery operations. Additionally, volatile hydrocarbons such as MDO are likely to weather, spread and evaporate quickly and lead to unsafe conditions in the vicinity of fresh hydrocarbon. Corralling volatile substances such as MDO also poses a safety risk and thus should be avoided. This response technique is therefore not feasible.			
Mechanical dispersion	No	N/A	This response strategy is not recommended.			
In-situ burning	No	N/A	This response strategy is not recommended.			
Shoreline protection and deflection	No	N/A	No shoreline contact predicted for the duration of the spill.			
Shoreline clean-up	No	N/A	No shoreline contact predicted for the duration of the spill.			
Oiled wildlife response	Yes	ALL	If oiled wildlife is a potential impact, request AMOSC to mobilise containerised oiled wildlife first strike kits and relevant personnel. Refer to relevant Tactical Response Plan for potential wildlife at risk. Mobilise AMOSC Oiled Wildlife Containers. Consider whether additional equipment is required from local suppliers.	Logistics and Planning		Oiled Wildlife Response Operational Plan Link
Scientific monitoring (type II)	Yes	ALL	Notify Woodside science team of spill event.			Oil Spill Scientific Monitoring Programme – Operational Plan Link

3. Response Protection Areas

Action: Provide relevant Control Agency with applicable Tactical Response Plans for any Response Protection Areas (RPAs) identified during operational monitoring.

Based on hydrocarbon spill modelling results, there are no sensitive receptors with the potential to be contacted by hydrocarbons at or above impact threshold levels for the duration of the spill.

If required, Tactical Response plans for locations in the region can be accessed via the [Oil Spill Portal - Tactical Response Plans](#) and include the details of potential forward operating bases and staging areas.

Oil Spill Trajectory Modelling specific to the spill event will be required to determine the regional sensitive receptors to be contacted beyond 48 hours of a spill.

Figure 3-1 illustrates the location of regional sensitive receptors in relation to the Stybarrow Decommissioning and Field Management Operational Area and identifies priority protection areas.

Consideration should be given to other stakeholders (including mariners) in the vicinity of the spill location. **Table 3-1** indicates the assets within the vicinity of the Stybarrow Decommissioning and Field Management Operational Area.

Table 3-1: Assets in the vicinity of the Stybarrow Decommissioning and Field Management Operational Area

Asset	Distance and Direction from Operational Area	Operator
Ngujima-Yin FPSO	20 km east	Woodside
Ningaloo Vision FPSO	23 km east	Santos
Pyrenees Venture FPSO	26 km east-south-east	Woodside

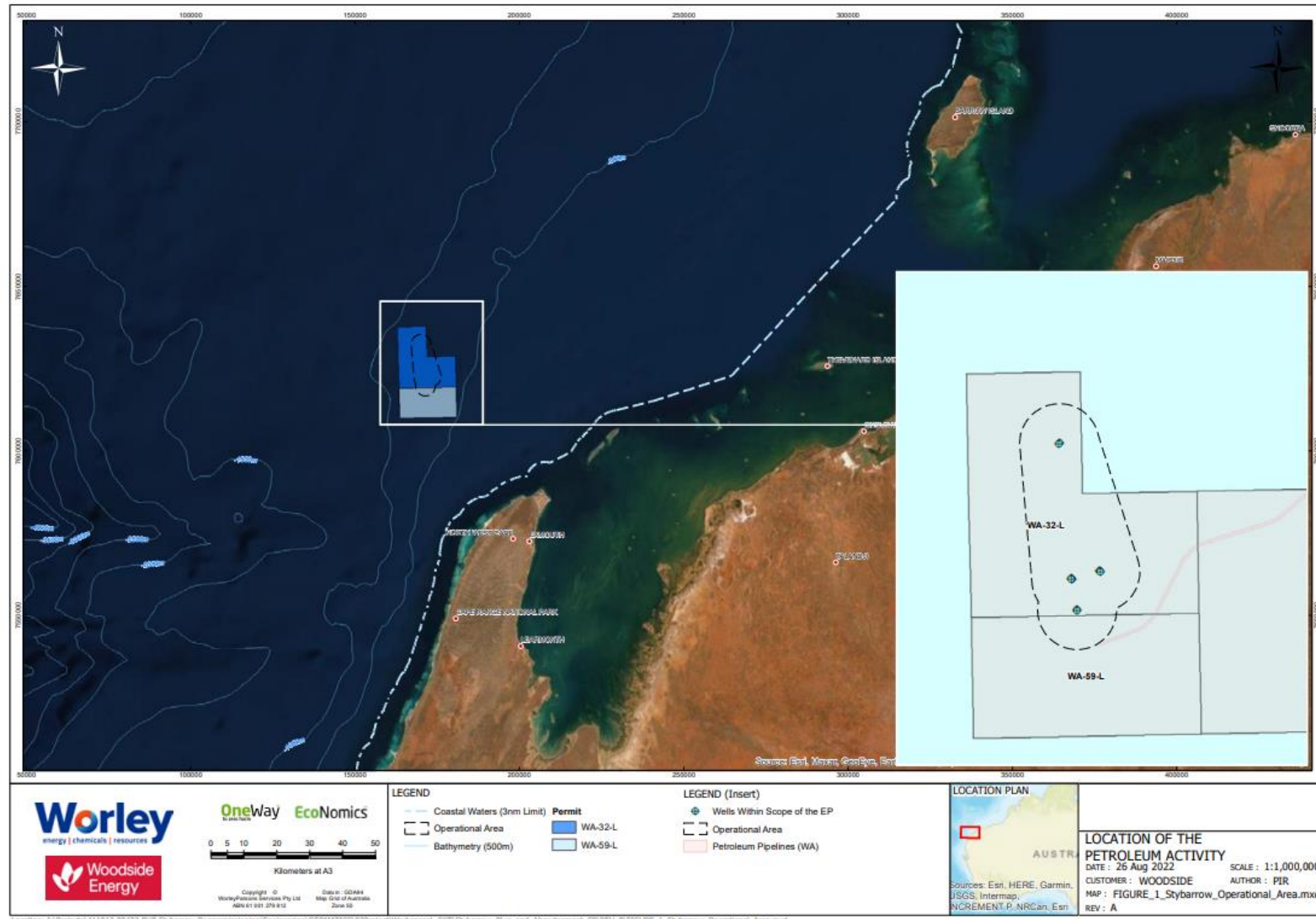


Figure 3-1: Map of Stybarrow Decommissioning and Field Management Operational Area

4. Surface Dispersant application

Surface dispersant application is not considered an appropriate response strategy for a spill of MDO as described in the Stybarrow Decommissioning and Field Management Environment Plan.

Annex 1 – Credible spill scenarios and hydrocarbon information

Table A - 1: Credible spill scenarios and hydrocarbon information

Scenario	Product	API gravity	Volume	Residue	Weathering rate		Suggested ADIOS2 Analogue ⁴
CS-01 Vessel collision resulting in rupture of MDO tank	Marine Diesel Oil	37.6	1000 m ³	5% or 50 m ³	12 hours (BP < 180 °C)	6%	Diesel Fuel Oil (Southern USA 1)
					24 hours (180 °C < BP < 265 °C)	35%	
					Several days (265 °C < BP < 380 °C)	54%	

⁴ Initial screening of possible ADIOS2 analogues considered hydrocarbons with similar APIs. Suggested selection is based on the closest distillation cut to the Woodside hydrocarbon. Only hydrocarbons with >380°C distillation cuts were included in selection process.

Annex 2 – Notification forms

Table A2 - 1: Notification forms

No.	Form Name	Link
1	Record of initial verbal notification to NOPSEMA template	Link
2	NOPSEMA Incident Report Form	Link
3	Marine Pollution Report (POLREP – AMSA)	Link
4	AMOSOC Service Contract	Link
5	Marine Pollution Report (POLREP – DoT)	Link
6a	OSRL Initial Notification Form	Link
6b	OSRL Mobilisation Activation Form	Link
7	RPS Response Oil Spill Trajectory Modelling Request	Link
8	Aerial Surveillance Observer Log	Link
9	Tracking buoy deployment instructions	Link

FORM 1 – RECORD OF INITIAL VERBAL NOTIFICATION TO NOPSEMA



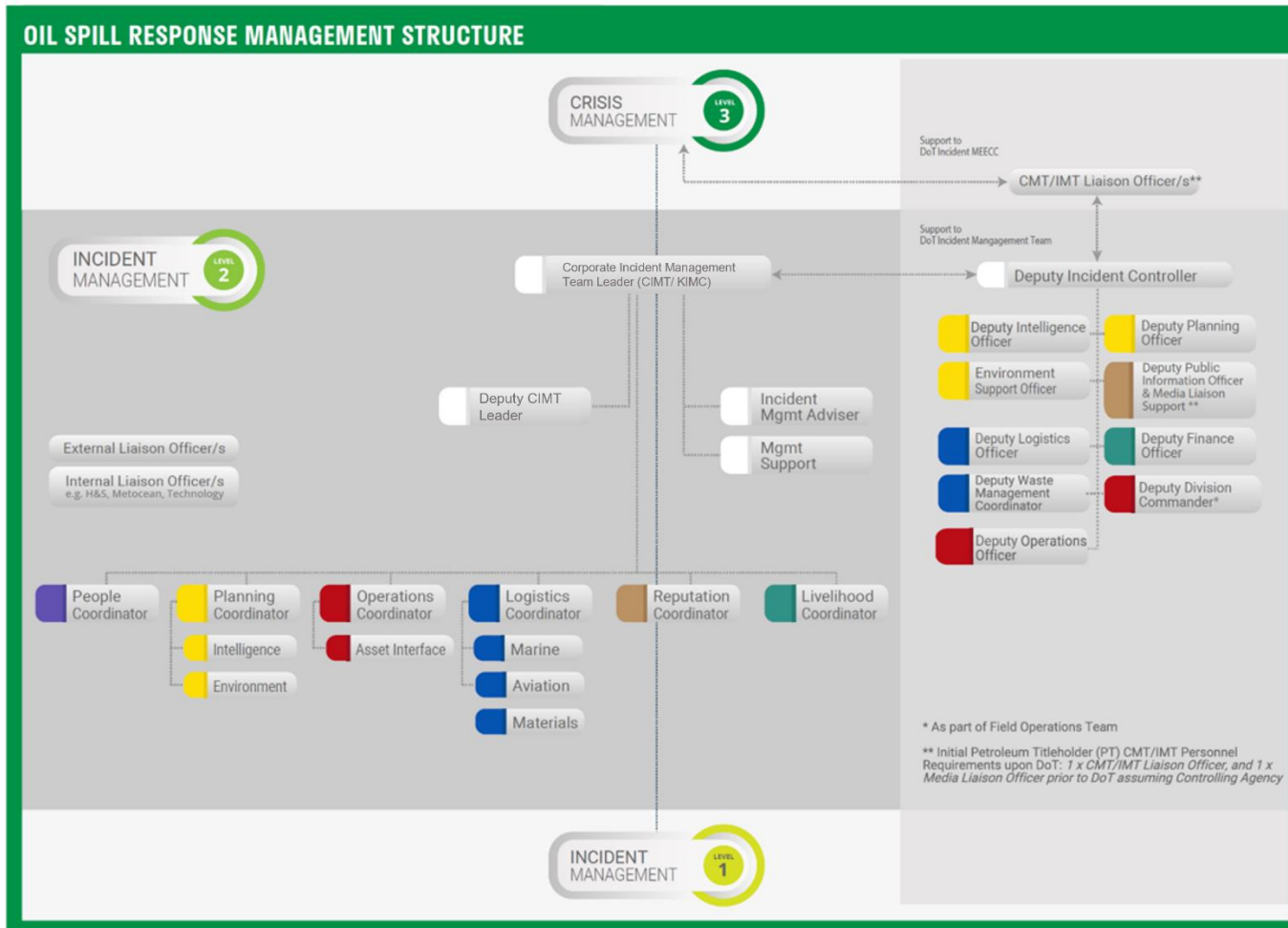
NOPSEMA phone: +61 1300 674 472		
Date of call		
Time of call		
Call made by		
Call made to		
Information to be provided to NOPSEMA:		
Date and time of incident/ time caller became aware of incident		
Details of incident	1. Location	
	2. Title	
	3. Source	<input type="checkbox"/> Platform
		<input type="checkbox"/> Pipeline
		<input type="checkbox"/> FPSO
		<input type="checkbox"/> Exploration drilling
		<input type="checkbox"/> Well
	<input type="checkbox"/> Other (please specify)	
	4. Hydrocarbon type	
	5. Estimated volume	
6. Has the discharge ceased?		
7. Fire, explosion or collision?		
8. Environment Plan(s)		
9. Other Details		
Actions taken to avoid or mitigate environmental impacts		
Corrective actions taken or proposed to stop, control or remedy the incident		
After the initial call is made to NOPSEMA, please send this record as soon as practicable to:		
NOPSEMA	submissions@nopsema.gov.au	
NOPTA	resources@nopta.gov.au	
DMIRS	petroleum.environment@dmirs.wa.gov.au	

Annex 3 – Spill assessment questions

What has happened?		
Date/time		
Spill source		
Spill cause		
Safety situation		
What is it?		
Oil type and name		
Oil properties	Specific gravity	
	Viscosity	
	Pour point	
	Asphaltenes	
	Wax content	
	Boiling point	
Where is it?		
Latitude and longitude		
Distance and bearing		
Affected area	<input type="checkbox"/>	Offshore
	<input type="checkbox"/>	Subsea
	<input type="checkbox"/>	Shoreline
	<input type="checkbox"/>	Estuary
	<input type="checkbox"/>	Port
	<input type="checkbox"/>	Harbour
	<input type="checkbox"/>	Inland
	<input type="checkbox"/>	River
	<input type="checkbox"/>	Other (please detail):
Water depth		
How big is it?		
Area		
Release type	<input type="checkbox"/>	Instantaneous Estimated volume:
	<input type="checkbox"/>	Continuous release Estimated release rate:
Where it is going?		
Metoccean conditions		
Currents and tides		
What is in the way?		
Resources at risk		
Time until resource contact		
What's happening to it?		
Weathering processes		
Response actions underway		

Annex 5 – Woodside Incident Management Structure

Woodside Incident Management Structure for Hydrocarbon Spill (including Woodside Liaison Officers Command Structure within DoT IMT if required).



Annex 6 – Woodside Liaison Officer Resources to DoT

In the event that DoT is required to establish an IMT, Woodside will make available an appropriate number of appropriately qualified persons to work within the DoT IMT. In the event the PPA is the Control Agency within the Dampier Port Limits, Woodside will make available similar roles as requested.

It is an expectation that Woodside’s nominated CMT Liaison Officer and the Deputy Incident Controller attend the DoT Fremantle ICC as soon as possible after the formal request has been made by the State Marine Pollution Coordinator (SMPC), and no later than 8am on the day following the request being formally made. For Woodside personnel designated to serve in DoT’s Forward Operating Base (FOB), it is expected that they arrive at the FOB no later than 24 hours from the formal request being made by the SMPC.

Area	WEL Liaison Role ⁶	Key Duties	#
DoT Maritime Environmental Emergency Coordination Centre (MEECC)	CIMT Liaison	<ul style="list-style-type: none"> • Provide a direct liaison between the CIMT and the MEECC. • Facilitate effective communications and coordination between the CIMT Leader and SMPC. • Offer advice to SMPC on matters pertaining to Petroleum Titleholder (PT) crisis management policies and procedures. 	1
DoT IMT Incident Control	Deputy Incident Commander (Deputy IC)	<ul style="list-style-type: none"> • Provide a direct liaison between the PT IMT and DoT IMT. • Facilitate effective communications and coordination between the PT IC and the DoT IC. • Offer advice to the DoT IC on matters pertaining to PT incident response policies and procedures. • Offer advice to the Safety Coordinator on matters pertaining to PT safety policies and procedures, particularly as they relate to PT employees or contractors operating under the control of the DoT IMT. 	1
DoT IMT Intelligence	Deputy Situation Unit Leader (Intelligence)	<ul style="list-style-type: none"> • As part of the Intelligence Team, assist the Intelligence Officer in the performance of their duties in relation to situation and awareness. • Facilitate the provision of relevant modelling and predications from the PT IMT. • Assist in the interpretation of modelling and predictions originating from the PT IMT. • Facilitate the provision of relevant situation and awareness information originating from the DoT IMT to the PT IMT. • Facilitate the provision of relevant mapping from the PT IMT. 	1

⁶ These positions would be mobilised, in consultation with DoT, to align to the actual spill scenario. The selected roles and/or individual personnel would be subject to continued evaluation to ensure continued 'best fit'. For CIMT roster arrangements, contact the WCC. During a prolonged response, additional personnel may be sourced through internal resourcing and mutual Aid agreements such as the AMOSC Core Group via [AMOSC Service Contract](#)

Area	WEL Liaison Role ⁶	Key Duties	#
		<ul style="list-style-type: none"> Assist in the interpretation of mapping originating from the PT IMT. Facilitate the provision of relevant mapping originating from the DoT IMT to the PT IMT. 	
DoT IMT Intelligence – Environment	Deputy Environment Unit Leader	<ul style="list-style-type: none"> As part of the Intelligence Team, assist the Environment Coordinator in the performance of their duties in relation to the provision of environmental support into the planning process. Assist in the interpretation of the PT OPEP and relevant TRP plans. Facilitate in requesting, obtaining and interpreting environmental monitoring data originating from the PT IMT. Facilitate the provision of relevant environmental information and advice originating from the DoT IMT to the PT IMT. 	1
DoT IMT Planning-Plans/ Resources	Deputy Planning Section Chief	<ul style="list-style-type: none"> As part of the Planning Team, assist the Planning Officer in the performance of their duties in relation to the interpretation of existing response plans and the development of incident action plans and related sub plans. Facilitate the provision of relevant incident action plan (IAP) and sub plans from the PT IMT. Assist in the interpretation of the PT OPEP from the PT. Assist in the interpretation of the PT IAP and sub plans from the PT IMT. Facilitate the provision of relevant IAP and sub plans originating from the DoT IMT to the PT IMT. Assist in the interpretation of the PT existing resource plans. Facilitate the provision of relevant components of the resource sub plan originating from the DoT IMT to the PT IMT. <p>(Note this individual must have intimate knowledge of the relevant PT OPEP and planning processes)</p>	1
DoT IMT Public Information-Media/ Community Engagement	Deputy Public Information Officer	<ul style="list-style-type: none"> As part of the Public Information Team, provide a direct liaison between the PT Media team and DoT IMT Media team. Facilitate effective communications and coordination between the PT and DoT media teams. Assist in the release of joint media statements and conduct of joint media briefings. Assist in the release of joint information and warnings through the DoT Information and Warnings team. Offer advice to the DoT Media Coordinator on matters pertaining to PT media policies and procedures. 	1

Area	WEL Liaison Role ⁶	Key Duties	#
		<ul style="list-style-type: none"> Facilitate effective communications and coordination between the PT and DoT Community Liaison teams. Assist in the conduct of joint community briefings and events. Offer advice to the DoT Community Liaison Coordinator on matters pertaining to the PT community liaison policies and procedures. Facilitate the effective transfer of relevant information obtained from through the Contact Centre to the PT IMT. 	
DoT IMT Logistics	Deputy Logistics Section Chief	<ul style="list-style-type: none"> As part of the Logistics Team, assist the Logistics Officer in the performance of their duties in relation to the provision of supplies to sustain the response effort. Facilitate the acquisition of appropriate supplies through the PTs existing OSRL, AMOSC and private contract arrangements. Collects Request Forms from DoT to action via PT IMT. <p>(Note this individual must have intimate knowledge of the relevant PT logistics processes and contracts)</p>	1
DoT IMT Finance-Accounts/ Financial Monitoring	Deputy Finance Section Chief	<ul style="list-style-type: none"> As part of the Finance Team, assist the Finance Officer in the performance of their duties in relation to the setting up and payment of accounts for those services acquired through the PTs existing OSRL, AMOSC and private contract arrangements. Facilitate the communication of financial monitoring information to the PT to allow them to track the overall cost of the response. Assist the Finance Officer in the tracking of financial commitments through the response, including the supply contracts commissioned directly by DoT and to be charged back to the PT. 	1
DoT IMT Operations	Deputy Operations Section Chief	<ul style="list-style-type: none"> As part of the Operations Team, assist the Operations Officer in the performance of their duties in relation to the implementation and management of operational activities undertaken to resolve an incident. Facilitate effective communications and coordination between the PT Operations Section and the DoT Operations Section. Offer advice to the DoT Operations Officer on matters pertaining to PT incident response procedures and requirements. Identify efficiencies and assist to resolve potential conflicts around resource allocation and simultaneous operations of PT and DoT response efforts. 	1

Area	WEL Liaison Role ⁶	Key Duties	#
DoT IMT Operations – Waste Management	Deputy Waste Coordinator (Materials)	<ul style="list-style-type: none"> • As part of the Operations Team, assist the Waste Management Coordinator in the performance of their duties in relation to the provision of the management and disposal of waste collected in State waters. • Facilitate the disposal of waste through the PT's existing private contract arrangements related to waste management and in line with legislative and regulatory requirements. • Collects Request Forms from DoT to action via PT IMT. 	1
DoT FOB Operations Command	FOB Deputy Incident Commander	<ul style="list-style-type: none"> • As part of the Field Operations Team, assist the Division Commander in the performance of their duties in relation to the oversight and coordination of field operational activities undertaken in line with the IMT Operations Section's direction. • Provide a direct liaison between the PT FOB and DoT FOB. • Facilitate effective communications and coordination between the PT Division Commander and the DoT Division Commander. • Offer advice to the DoT Division Commander on matters pertaining to PT incident response policies and procedures. • Assist the Safety Coordinator deployed in the FOB in the performance of their duties, particularly as they relate to PT employees or contractors. • Offer advice to the Safety Coordinator deployed in the FOB on matters pertaining to PT safety policies and procedures. 	1
Total			11

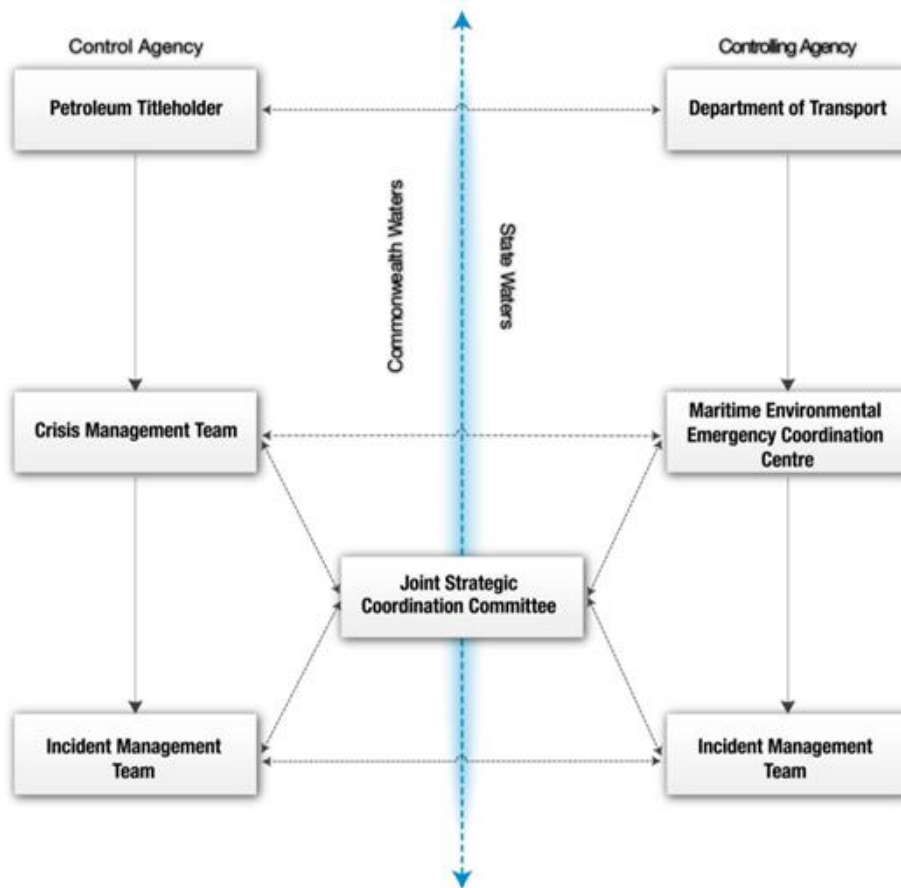
Annex 7 – DoT Liaison Officer Resources to Woodside

Once DoT activates a State waters/shorelines IMT, DoT will make available the following roles to Woodside.

Area	DoT Liaison Role	Personnel Sourced from:	Key Duties	#
WEL CIMT	DoT Liaison Officer (prior to DoT assuming Controlling Agency)/ Deputy Incident Controller – State waters (after DoT assumes Controlling Agency)	DoT	<ul style="list-style-type: none"> Facilitate effective communications between DoT's SMPC/ Incident Controller and the PT's appointed CMT Leader/ Incident Controller. Provide enhanced situational awareness to DoT of the incident and the potential impact on State waters. Assist in the provision of support from DoT to the PT. Facilitate the provision technical advice from DoT to the PT Incident Controller as required. 	1
WEL Public Information FST (Media Room)/ Public Information – Media	DoT Media Liaison Officer	DoT	<ul style="list-style-type: none"> Provide a direct liaison between the PT Media team and DoT IMT Media team. Facilitate effective communications and coordination between the PT and DoT media teams. Assist in the release of joint media statements and conduct of joint media briefings. Assist in the release of joint information and warnings through the DoT Information & Warnings team. Offer advice to the PT Media Coordinator on matters pertaining to DoT and wider Government media policies and procedures. 	1
Total DoT Personnel Initial Requirement to Woodside				2

Appendix B – Western Australia Department of Transport Incident Management Team Coordination

Control and Coordination IMT Structure with WA DoT



Note: DoT IMT contains an appropriate number of appropriately qualified persons from the Petroleum Titleholder in key areas commensurate with their level of introduced risk.

Appendix C – Tactical Response Plans

TACTICAL RESPONSE PLANS
Exmouth
Mangrove Bay
Turquoise Bay
Yardie Creek
Muiron Islands
Jurabi to Lighthouse Beaches Exmouth
Ningaloo Reef – Refer to Mangrove/Turquoise bay and Yardie Creek
Exmouth Gulf
Shark Bay Area 1: Carnarvon to Wooramel
Shark Bay Area 2: Wooramel to Petite Point
Shark Bay Area 3: Petite Point to Dubaut Point
Shark Bay Area 4: Dubaut Point to Herald Bight
Shark Bay Area 5: Herald Bight to Eagle Bluff
Shark Bay Area 6: Eagle Bluff to Useless Loop
Shark Bay Area 7: Useless Loop to Cape Bellefin
Shark Bay Area 8: Cape Bellefin to Steep Point
Shark Bay Area 9: Western Shores of Edel Land
Shark Bay Area 10: Dirk Hartog Island
Shark Bay Area 11: Bernier and Dorre Islands
Abrohlos Islands: Pelseart Group
Abrohlos Islands: Wallabi Group
Abrohlos Islands: Easter Group
Dampier
Rankin Bank & Glomar Shoals
Barrow and Lowendal Islands
Pilbara Islands – Southern Island Group
Montebello Island – Stephenson Channel Nth TRP
Montebello Island – Champagne Bay and Chippendale channel TRP
Montebello Island – Claret Bay TRP
Montebello Island – Hermite/Delta Island Channel TRP
Montebello Island – Hock Bay TRP
Montebello Island – North and Kelvin Channel TRP
Montebello Island – Sherry Lagoon Entrance TRP
Withnell Bay
Holden Bay

King Bay
No Name Bay / No Name Beach
Enderby Island – Dampier
Rosemary Island – Dampier
Legendre Island – Dampier
Karratha Gas Plant
KGP to Whitnell Creek
KGP to Northern Shore
KGP Fire Pond & Estuary
KGP to No Name Creek
Broome
Sahul Shelf Submerged Banks and Shoals
Clerke Reef (Rowley Shoals)
Imperieuse Island (Rowley Shoals)
Mermaid Reef (Rowley Shoals)
Scott Reef
Oiled Wildlife Response
Exmouth
Dampier region
Shark Bay

Appendix E ALARP Assessment for Resourcing Oil Spill Response Strategies

1 Source Control

Table 1: RS1 Source Control Response Strategy risk assessment including evaluation of effectiveness of controls, environmental benefit gained compared with practicability and ALARP summary

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity (Volume of Oil Treated)	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
Eliminate	Negative environmental impact from the execution of this response strategy.	No source control.	Do nothing option.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No environment benefit would be gained from this option. Halting the release of hydrocarbons and spill clean-up activities are essential.	The do nothing option is not considered acceptable.	Reject: Source control is a recognised strategy for the mitigation of oil spill impacts.	-
Administrate	Ad hoc response with no plan for source control immediately following surface release.	Dependent on nature and scale of spill, spill response executed in accordance activity-specific OPEP (<i>Stybarrow Decommissioning</i>) (BHPB-00SC-N000-0004) or vessels' MARPOL-compliant SOPEP.	Control is based on legislative requirements – OPGGS (Environment) Regulations and MARPOL Annex I (Prevention of Pollution by Oil).	Medium	1	0-2 hours	Minor	H	H	H	H	H	Implements response plan to quickly and efficiently deal with unplanned hydrocarbon spills in order to reduce impacts to the marine environment.	Controls have high effectiveness; are available, functional and reliable and in general are serviceable and compatible with other control measures. Controls have minor cost implications for the operation.	Accept: Controls based on legislative requirements must be accepted. Controls are practicable and the cost sacrifice is not disproportionate to the environmental benefit gained.	PS RS1.4
	Response activities not considered in preparedness planning therefore not allowing for input into the NEBA.	Operational NEBA to include evaluation of requirement for implementation of source control.	Source control activated and supported by Operational NEBA to provide a net environmental benefit to prevent environmental impacts to sensitive environmental receptors.	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	Positive environmental benefit from identification of the most effective response strategies with the least detrimental impacts. The Operational NEBA will be completed based on specific circumstances of the spill incident, using real-time information (spill trajectory modelling, spill observations, weather and sea state conditions etc.) to confirm the appropriate response strategies to adopt for	Strategic NEBA is included in the OPEP and the Operational NEBA must be undertaken to gain understanding of net environmental benefit of implementation of response strategies.	Accept: Controls are practicable and the cost is covered under the primary contract and is proportionate to the environmental benefit gained. Source Control is accepted as the best option for any hydrocarbon release.	PS RS1.1

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity (Volume of Oil Treated)	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
													protection of priority locations and sensitive receptors. Shoreline protection and/or clean-up will be activated if the Operational NEBA indicates a benefit would be gained in protecting any shoreline sensitivities that may come into contact with the released diesel.			
	Source control equipment not available on vessel	Pumps for transferring hydrocarbons to different tanks are regularly tested. Magnetic patches available on vessel to potentially control small holes/damage to vessel hull	Control is based on legislative requirements – OPGGS (Environment) Regulations and MARPOL Annex I (Prevention of Pollution by Oil).	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	Implements response plan to quickly and efficiently deal with unplanned hydrocarbon spills in order to reduce impacts to the marine environment.			<u>PS RS1.5</u>
	Deck leaks enter the environment via drainage channels.	Scupper plugs or equivalent deck drainage control measures available on vessel where hazardous chemicals and hydrocarbons stored and frequently handled.	Control is based on legislative requirements – MARPOL Annex I (Prevention of Pollution by Oil).	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	Implements response plan to quickly and efficiently deal with unplanned hydrocarbon spills in order to reduce impacts to the marine environment.			<u>PS RS1.6</u>
	Predictive spill trajectory unknown when undertaking Operational NEBA.	Modelling predictions of spill trajectory to be undertaken to support the Operational NEBA.	Used as tool to gain situational awareness through real-time spill trajectory modelling to enable evaluation of which sensitive receptors require priority protection.	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	Positive environmental benefit gained as oil spill trajectory modelling will assist in the effectiveness of response strategies and will enable real-time evaluation of which sensitive receptors require priority protection.			<u>PS RS1.2</u>
	Response continues with no end point or is removed early.	Response strategy activities continued until termination criteria met.	Ensures that the source control – vessel control response strategy continues until the performance outcome has been achieved.	N/A	N/A	Immediately and on-going	Minor	H	H	H	H	H	Positive environmental benefit gained from ensuring that the source control – vessel control response strategy continues until the performance			<u>PS RS1.3</u>

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity (Volume of Oil Treated)	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
													outcome has been achieved.			

2 Monitor and Evaluate

Table 2: RS2 Monitor and Evaluate Response Strategy risk assessment including evaluation of effectiveness of controls, environmental benefit gained compared with practicability and ALARP summary

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
Eliminate	Negative environmental impact from the execution of this response strategy.	No situational awareness.	Do nothing option	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No environment benefit would be gained from this option. Developing a monitoring and evaluate response strategy is a necessary contingency to have in place prior to and during operations and cannot be eliminated. Monitoring and evaluation is integral to the management and verification of spill response strategies for all spill scenarios.	The do nothing option is not considered acceptable.	Select: The monitor and evaluate strategy is a mandatory response strategy to have in place and cannot be eliminated.	-
Administrate	Response strategy executed adhoc with no real planning.	Monitor and evaluate operations to be reviewed and managed by IMT through Incident Action Plan (IAP) process.	Within the first 24 hours, BHP IMT will enact the first strike plan in conjunction with development of an IAP.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit from identification of the most effective monitor and evaluate response activities to track the spill trajectory and to feed into real-time decision-making for further strategies for responding to and managing spill event. The review/evaluation of monitor and evaluate options will be implemented immediately for all levels of spills.	Controls have high effectiveness; are available, functional and reliable and in general are serviceable and compatible with other control measures. Controls have minor cost implications for the operation.	Accept: Controls are practicable and the cost sacrifice is not disproportionate to the environmental benefit gained.	PS RS2.1
	Spill trajectory not known in early stages of the response.	Spill fate modelling initiated within 2 hours of incident notification to support Operational NEBA.	Used as tool to gain situational awareness through real-time spill trajectory modelling to enable evaluation of which sensitive receptors require priority protection.	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	Positive environmental benefit gained as oil spill trajectory modelling will enable real-time evaluation of which sensitive receptors require priority protection.			PS RS2.2

Risk Assessment				ALARP Assessment										Performance Standard			
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary	
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility					
	Response activities not considered in preparedness planning therefore not allowing for input into the NEBA.	Operational NEBA to include evaluation of requirement for various monitoring and evaluation activities to be employed i.e. aerial/vessel surveillance; autonomous underwater vehicles; oil spill tracker buoys (OSTBs); and satellite imagery.	Various techniques for tracking, monitoring and evaluating the spill. The methods employed will be dependent on the volume of the spill, sea state/ weather conditions and health/safety considerations.	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	<p>Positive environmental benefit from identification of the most effective monitor and evaluate response strategy to track the spill dependent on sea state and weather conditions, spill volume and health/safety considerations. The Operational NEBA will be completed based on specific circumstances of the spill incident, using real-time information (spill trajectory modelling, spill observations, weather and sea state conditions etc.) to confirm the appropriate response strategies to adopt for protection of priority locations and sensitive receptors.</p> <p>Information received from the various monitor and evaluate activities implemented will be crucial in decision-making for the activation of other response strategies. For example, considerations include the time of year of the spill to take account of environmental sensitivities i.e. peak turtle nesting season; coral spawning events; whale and whale shark migration; and seabird nesting periods.</p>				PS RS2.3, and PS RS2.10
Current Capability																	
Administrate	Aerial surveillance resources not available.	Contract in place with CHC helicopters and backup by Babcock helicopters.	BHP contract in place for the provision of aerial surveillance mobilising from Karratha (or alternatively from Barrow Island) in the event of a hydrocarbon spill.	N/A	2	0-2 hours	Minor	H	H	H	H	H	<p>Positive environmental benefit gained from having aircraft/ vessels already on contract or readily obtained through MOU's for spill surveillance activities. Dependent on the size of the spill, vessel/ aerial surveillance would be initiated immediately.</p>	<p>The response capacity is small but the effectiveness is generally high (vessel operations are only possible during daylight hours). The cost of using all available BHP marine vessels, those available through Mutual Aid and on the local spot-charter market in Exmouth / Dampier / Broome has minor cost implications. Cost during activation would be moderate.</p>	Accept: Controls are practicable and the cost sacrifice is not grossly disproportionate to the environmental benefit gained.	PS RS2.4	

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
	Marine-based resources (vessels) not available to respond when required.	Access to support vessels (BHP, mutual aid, local charter).	BHP Marine Fleet (Contracted OSV), Mutual aid MOU's (Santos / Woodside) and vessels of opportunity available on the local spot charter market in Exmouth, Onslow and Dampier. Vessels already on contract or readily obtained through MOU's, no additional standby cost.	N/A	1-4	Within 12 hours	Moderate	H	H	H	H	H				
	Spill modelling resources not available.	Contract in place with AMOSC who maintains call-off contract with RPS* to provide spill modelling in the event of a hydrocarbon spill.	Real-time monitoring and evaluation of the spill is a mandatory primary response strategy implemented for Level 1 – 2 spills required for real-time decision-making during a spill event. BHP has agreements and contracts in place to expedite implementation of monitor and evaluate activities.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained from implementation of this control measure. Oil spill trajectory modelling will be conducted to predict the extent of impacts to offshore habitat, for any physical disturbance that may impact shoreline, nearshore areas, or areas protected for the purpose of conservation. The IMT will engage RPS * via a call-off contract maintained by AMOSC to start modelling the spill, and correlate it with real data received from aerial surveillance and/or OSTB.	Control has high effectiveness; it is available, functional and reliable and in general it is reliable and compatible with other control measures. Control has minor cost implications for operations.		PS RS2.5
	Spill modelling not available within the needed timeframe and to the expected standard.	Ensure spill modelling capability meets and exceeds the industry standards for oil spill modelling.		From these sources, RPS will develop an oil spill trajectory model for the next 5 days, which will allow the IMT to direct resources for the next phase of the response. Alternative oil spill modelling agencies may be selected dependent on operational requirements.										Control has high effectiveness; it is available, functional and reliable and in general it is reliable and compatible with other control measures. Control has minor cost implications for operations.		PS RS2.5,
	Tracker buoys not immediately available for deployment.	Access to OSTB's from AMOSC and Mutual Aid.	BHP has agreements in place to expedite resourcing additional OSTB's through AMOSC in the event of a spill.	N/A	2	Within 12-18 hours	Moderate	H	H	H	H	H	Positive environment benefit gained from implementation of this control measure BHP has agreements in place to expedite resourcing OSTB's through AMOSC in the event of a spill.	The response capacity is small but the control effectiveness is generally high. The cost of using resources/ equipment already in place is minor.		PS RS2.4

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
	Real time monitoring arrangements not in place as part of response preparedness.	BHP has agreement in place with OSRL/ third-party for the provision of satellite imagery.	Real-time monitoring and evaluation of the spill is a mandatory primary response strategy implemented for Level 1 – 2 spills required for real-time decision-making during a spill event. BHP has agreements in place to expedite acquisition of satellite imagery in the event of a spill.	N/A	N/A	< 24 hours for acquisition of first satellite image.	H	H	H	H	H	H	Positive environmental benefit by having access to monitor and evaluate resources obtained via contractual arrangements and service agreements with OSRL and other third-party vendors ensures activation of response strategy activities are expedited in the event of a spill.	The response capacity is minor but the control effectiveness is generally high The cost of having agreements/contracts in place is minor. Cost during activation would be moderate.		<u>PS RS2.6</u>
	Aerial surveillance personnel not available.	Access to aerial surveillance and trained observers from AMOSC Core Group.	BHP has agreements in place to expedite resourcing additional aerial surveillance and trained observers in the event of a spill.	N/A	~16	24-48 hours	Moderate	H	H	H	H	H	Positive environment benefit gained from implementation of this control measure BHP has agreements in place to expedite resourcing additional aerial surveillance and trained observers in the event of a spill.	The cost of maintaining membership with AMOSC		<u>PS RS2.4</u>
Scalable																
Administrate	Marine-based resources (vessels) not available to respond when required.	Support vessels (Australia).	Acquisition of charter vessels on the spot-market from around Australia.	Medium	As required	3-8 days	Minor	H	H	H	H	H	Positive environmental benefit by implementation of this control measure. The ongoing charter of more support vessels will continue on an 'as required' basis during the spill response.	The response capacity is small for vessel operations but the control effectiveness is generally high (vessel operations are only possible during daylight hours) and the cost of using marine vessels available as required through the spot-charter market around Australia has minor cost implications. Cost during activation would be moderate.	Accept: Controls are practicable and the cost sacrifice is not grossly disproportionate to the environmental benefit gained.	<u>PS RS2.4</u>
	Tracker buoys not immediately available for deployment.	Access to additional OSTB's from the Pyrenees Facility .	Access to OSTB's located on the Pyrenees Facility	N/A	2	2-5 days	Minor	H	H	H	H	H	Positive environment benefit gained from implementation of this control measure.	The response capacity is small but the control effectiveness is generally high. The cost of using resources/ equipment already in place is minor.		<u>PS RS2.4</u>
	Aerial surveillance personnel not available.	Access to aerial surveillance and trained observers from OSRL.	BHP has agreements in place to expedite resourcing additional aerial surveillance and trained observers in the event of a spill.	N/A	18	14 days	Moderate	H	H	H	H	H	Positive environment benefit gained from implementation of this control measure BHP has agreements in place to expedite resourcing additional aerial surveillance and trained observers in the event of a spill.	The cost of maintaining membership with OSRL.		<u>PS RS2.4</u>

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
	Aerial surveillance personnel not available.	Access to aerial surveillance and trained observers via mutual aid.	BHP has mutual aid MoU's in place to expedite resourcing additional aerial surveillance and trained observers in the event of a spill.	N/A		24-48 hours	Moderate	H	H	H	H	H	Positive environment benefit gained from implementation of this control measure BHP has mutual aid MoU's in place to expedite resourcing additional aerial surveillance and trained observers in the event of a spill.	The cost of maintaining membership with AMOSC and OSRL.		PS RS2.4
	Marine-based resources (vessels) not available to respond when required.	Dedicated OSR vessel on standby at Exmouth, Naval Base.	On standby 24/7 during operations to expedite initiation of vessel surveillance. Requests for offshore vessel support can be made by AMSA.	N/A	1	0-1 days	Moderate \$35K/day x ~ 295 days = ~\$10.3M	H	H	L	L	H	Positive environment benefit gained by having dedicated aircraft/ vessels on standby to immediately monitor the spill.	Dedicated standby vessels and aircraft have substantial costs that do not provide a measurable advantage.	Reject This control has high costs that are disproportionate to any environmental benefit that might be gained. This takes into consideration additional fuel required for having vessels on standby at site, additional collision risk, and interference with other sea users.	-
	Marine-based resources (vessels) not available to respond when required.	Dedicated OSR vessel on standby at Dampier Supply Base.	On standby 24/7 during operations to expedite initiation of vessel surveillance. Requests for offshore vessel support can be made by AMSA.	N/A	1	0-1 days	Moderate \$35K/day x ~ 295 days = ~\$10.3M	H	H	L	L	H				-

3 Environmental Monitoring

Table 5: RS10 Environmental Monitoring Response Strategy risk assessment including evaluation of effectiveness of controls, environmental benefit gained compared with practicability and ALARP summary

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
Eliminate	Negative environmental impact from the execution of this response strategy.	No environmental monitoring.	Do nothing option.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No environment benefit would be gained from this option; environmental data on any oil spill impacts will be required to understand recovery from any disturbance and to inform the effectiveness of the response strategies.	This control is practicable and not implementing it would not be satisfactory from a stakeholder perspective.	Reject: Environmental monitoring is a recognised strategy for understanding the effects of an oil spill on environmental sensitivities.	-
Administrate	Response strategy executed adhoc with no real planning leading ineffective response.	Environmental monitoring operations reviewed and managed by IMT through Incident Action Plan (IAP) process.	Within the first 24 hours, the BHP IMT will develop IAPs.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit from identification of the most effective response strategies with the least detrimental impacts. The review/evaluation of shoreline protection operations will take place almost immediately in the event of a Level 2 spill. The shoreline protection operations would be adapted based on real-time information regarding the spill incident: determine if sea state and weather conditions are conducive to operations and	Controls have high effectiveness; are available, functional and reliable and in general are serviceable and compatible with other control measures. Controls have minor cost implications.	Accept: Controls are practicable and the cost sacrifice is not disproportionate to the environmental benefit gained.	PS RS10.1

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
													applicability with other response strategies.			
	Response activities not considered in preparedness planning therefore not allowing for input into the NEBA.	Operational NEBA to include evaluation of requirement for implementation of environmental monitoring operations, initiate mobilisation of resources within 24 hours notification by Incident Commander.	The environmental monitoring response strategy will be activated if Operational NEBA indicates the implementation would provide a net environmental benefit in understanding potential environmental impacts to sensitive environmental receptors.	N/A	N/A	0-1 days	Minor	H	H	H	H	H	Positive environmental benefit from identification of the most effective response strategies with the least detrimental impacts. The Operational NEBA will be completed based on specific circumstances of the spill incident, using real-time information (spill trajectory modelling, spill observations, weather and sea state conditions etc.) to confirm the appropriate response strategies to adopt for protection of priority locations and sensitive receptors. Environmental monitoring will be activated by the Operational NEBA to understand environmental impacts to sensitive receptors.			PS RS10.2 and PS RS10.3
	Poor situational awareness and understanding of oil spill trajectory prior to response execution (i.e. oil could be heading out to sea).	Modelling predictions of oil trajectory to be undertaken to support the Operational NEBA.	Used as tool to gain situational awareness through real-time spill trajectory modelling to enable direction of daily environmental monitoring operations.	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	Positive environmental benefit gained as oil spill trajectory modelling will assist in the effective deployment of environmental monitoring field teams to areas where sensitive receptors require priority protection.			PS RS10.4

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
	Insufficient number of trained personnel.	Trained personnel to implement environmental monitoring operations.	Use of skilled personnel to implement environmental monitoring operations will increase efficiency of oil spill protection efforts.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained by using skilled personnel to implement environmental monitoring guidelines, which will increase efficiency of response efforts, increases the potential that impacts to sensitive receptors will be prevented and reduces the possibility that mistakes are made that magnify the severity of the situation.		<u>PS RS10.3</u>	
	Poor understanding of the effectiveness of response strategies and their impact on the environment.	Activation of environmental monitoring guidelines will follow pre-designated plans for establishing works areas, as described in North West Cape Sensitivity Mapping (AOHSE-ER-0036), to protect environmental sensitivities.	Increases the potential that impacts to sensitive receptors will be prevented by avoiding areas with environmental sensitivity.	N/A	N/A	N/A	Minor	H	H	H	H	H		<u>PS RS10.5</u>		
	Vessel selection and use may cause more impact than the benefit.	Vessels used to implement environmental monitoring will be fit-for-purpose and no anchoring of vessels will occur on emergent reefs or other fragile / sensitive benthic habitats [see Note 1 at end of table].	Increases the potential that impacts to sensitive receptors will be prevented by using plant and equipment that is fit-for-purpose.	N/A	N/A	N/A	Minor	H	H	H	H	H		<u>PS RS10.6</u>		
	Monitoring activities impacting areas of cultural significance.	Environmental monitoring operations will avoid cultural heritage sensitivities.	Increases the potential that impacts to sensitive receptors will be prevented by avoiding areas of known cultural significance.	N/A	N/A	N/A	Minor	H	H	H	H	H		<u>PS RS10.10</u>		
	Response continues with no end point or is removed early.	Response strategy activities continued until termination criteria met.	Ensures that the environmental response strategy continues until the performance outcomes have been achieved.	N/A	N/A	N/A	Minor	H	H	H	H	H		<u>PS RS10.11</u>		

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
														performance outcomes have been achieved.		
Current Capability																
Administrative	Insufficient specialised personnel available – resourcing.	Access to first strike environmental monitoring responders for water quality, sediment quality and benthic infauna (pre-approved vendors who can be called upon at short notice to provide services if required).	Mobilisation of emergency responders to Exmouth from Perth to collect water and sediment samples in the post-spill pre-impact period.	Small	SGS	48-72 hours	Minor	H	H	H	H	H	Positive environmental benefit gained from implementation of this control measure. The objective of environmental monitoring is to collect data to understand the effect of an oil spill on environmental sensitivities.	The response capacity is small but the control effectiveness is generally high. Pre-approved vendors in place during petroleum activities for activation of environmental monitoring services in the event of an oil spill. Control has minor cost implications	Accept: Controls are practicable and the cost sacrifice is not grossly disproportionate to the environmental benefit gained.	<u>PS RS10.7</u>
	Insufficient specialised personnel available – resourcing.	Access to scientific field sampling personnel.	Mobilisation of scientific field sampling personnel to Exmouth from Perth to collect environmental data (birds, marine mammals, megafauna, benthic habitats and benthic primary producers, marine reptiles, fisheries and fishes) following sampling designs and procedures outlined in the relevant environmental monitoring procedure.	Small	80	48-72 hours	Minor	H	H	H	H	H				<u>PS RS10.7</u>
	Poor sampling techniques and plans leading to inadequate monitoring and poor quality data / results.	Sampling operations for marine water, sediment quality and benthic infauna to follow procedures outlined in AOHSE-ER-0037 to allow determination of any environmental impacts and inform effectiveness of response strategies. Laboratory analyses will follow: US EPA Method 8260 (volatile organic hydrocarbons); and US EPA Method 8015 (total petroleum hydrocarbons).	Standard procedures and methodologies (US EPA) are in place for laboratory analysis.	Small	N/A	N/A	Minor	H	H	H	H	H				<u>PS RS10.8</u>

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
	Poor sampling techniques and plans leading to inadequate monitoring and poor quality data / results.	Sampling operations for marine mammals and megafauna, avifauna, shallow water benthic habitats, marine reptiles, commercial/ recreational fish species and mobile and site-attached fishes associated with coral reefs, seagrasses, macroalgal beds, deep-water sponge gardens and mangroves will follow procedures outlined in AOHSE-ER-0038, AOHSE-ER-0039, AOHSE-ER-0040, AOHSE-ER-0043, AOHSE-ER-0048 and AOHSE-ER-0051 to allow determination of any environmental impacts and inform effectiveness of response strategies.	Development of oil spill environmental monitoring appropriate to the nature and scale of the environmental risk to determine the extent, severity and duration of impact to relevant environmental receptors.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				PS RS10.9
Scalable Options																
Administrative	Insufficient specialised personnel available – resourcing.	Access to more environmental monitoring responders.	Mobilisation of more scientific field sampling personnel to Exmouth from Perth to collect environmental data (birds, marine mammals, megafauna, benthic habitats and benthic primary producers, marine reptiles, fisheries and fishes) following sampling designs and procedures outlined in the relevant environmental monitoring procedure.	Small	50	14-21 days	Minor	H	H	H	H	H	Positive environmental benefit gained from implementation of this control measure. The objective of environmental monitoring is to collect data to understand the effect of an oil spill on environmental sensitivities.	The response capacity is small but the control effectiveness is generally high. BHP has access to this capability through preferred vendors. Control has minor cost implications.	Accept: Control is practicable and the cost sacrifice is not grossly disproportionate to the environmental benefit gained.	PS RS10.7
	Insufficient specialised personnel available – resourcing.	Dedicated environmental monitoring crew with sampling equipment on standby at Exmouth.	On standby 24/7 during operations to expedite initiation of environmental monitoring operations.	Small	10	0-1 days	Major, >10 people at \$1,000 / day by ~295 days	H	H	Low	H	H	Positive environmental benefit gained from implementation of this control measure. The objective of environmental monitoring is to collect data to understand the effect of an oil spill on environmental	Dedicated standby field crews have substantial costs that would be incurred for the duration of the operation.	Reject: This control has high costs that are disproportionate to the potential environmental benefit that might be gained particularly taking into	-

Risk Assessment				ALARP Assessment											Performance Standard	
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained	Practicability		ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
													sensitivities. Scalable options for marine recovery operations involve having dedicated vessels on standby with marine recovery equipment on-board in the unlikely event of loss of hydrocarbons.		consideration the availability of first strike responders who are contracted to be on 24/7 standby during the activity and can be onsite with 'hot light' status.	
[1] For the purpose of this control, deploying remote video cameras onto sensitive and fragile habitats will not be considered 'anchoring'.																

4 Oiled Wildlife Response

Table 6: RS11 Oiled Wildlife Response Strategy risk assessment including evaluation of effectiveness of controls, environmental benefit gained compared with practicability and ALARP summary

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
Eliminate	Negative environmental impact from the execution of this response strategy	No oiled wildlife response	Do nothing option	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No environment benefit would be gained from this option.	This control is practicable and not implementing it would not be satisfactory from a stakeholder perspective.	Reject: Oiled wildlife response is a recognised strategy for preventing impacts of an oil spill on environmental sensitivities.	-
Administrate	Response strategy executed adhoc with no real planning leading to ineffective response	Oiled wildlife response operations will be reviewed and managed by IMT through Incident Action Plan (IAP) process.	Within the first 24 hours, the BHP IMT will develop IAPs.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit from identification of the most effective response strategies with the least detrimental impacts. The review/evaluation of oiled wildlife operations will take place almost immediately in the event of a Level 2 spill. The oiled wildlife operations would be adapted based on real-time information (situational awareness / OSTM) regarding the spill incident to inform collection of wildlife.	Controls have high effectiveness; are available, functional and reliable and in general are serviceable and compatible with other control measures. Controls have minor cost implications.	Accept: Controls are practicable and the cost sacrifice is not disproportionate to the environmental benefit gained.	PS RS11.1
	Response activities not considered in preparedness planning therefore not allowing for input into the NEBA.	Operational NEBA to include evaluation of requirement for implementation of oiled wildlife response.	The oiled wildlife response strategy will be activated if Operational NEBA indicates the implementation would provide a net environmental benefit in preventing impacts to sensitive receptors.	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	Positive environmental benefit from identification of the most effective response strategies with the least detrimental impacts. The Operational NEBA will be completed based on specific circumstances of the spill incident, using real-time information (spill trajectory modelling, spill observations, weather and sea state conditions etc.) to confirm the appropriate response strategies to adopt for protection of priority locations and sensitive receptors. Oiled wildlife response will be activated by the Operational NEBA to prevent impacts to sensitive receptors.			PS RS11.2
	Unsuitably qualified personnel	Lead response personnel are trained and experienced for the activities to which they are assigned.	Use of skilled personnel to implement oiled wildlife response will increase efficiency of oil spill protection efforts.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained by using skilled personnel to implement oiled wildlife response following Industry and WA State Government drafted guidelines, which will increase efficiency of response efforts, increases the potential that impacts to sensitive receptors will be prevented and reduces the possibility that mistakes are made that magnify the severity of the situation.			PS RS11.3

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
	Response strategy executed adhoc with no real planning leading to ineffective response	Activation and implementation of oiled wildlife response will follow pre-designated plans for establishing works areas, as described in Western Australian Oiled Wildlife Response plan (WAOWRP); and Pilbara Region Oiled Wildlife Response Plan (PROWRP).	Increases the potential that impacts to sensitive receptors will be prevented by avoiding areas with environmental sensitivity.	N/A	N/A	N/A	Minor	H	H	H	H	H				<u>PS RS11.5</u>
	Response activities impacting areas of cultural significance	Oiled wildlife response operations will avoid cultural heritage sensitivities.	Increases the potential that impacts to sensitive receptors will be prevented by avoiding areas of known cultural significance.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained by taking into consideration any advice from State government agencies and spatial information to avoid impacts to sensitive cultural heritage sensitivities.			<u>PS RS11.8</u>
	Response continues with no end point or is removed early.	Response strategy activities continued until termination criteria met.	Ensures that the oiled wildlife response strategy continues until the performance outcome has been achieved.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained from ensuring that the oiled wildlife response strategy continues until the performance outcome has been achieved.			<u>PS RS11.7 and PS RS11.9</u>
Current Capability																
Administrative	No access to equipment and personnel in reasonable timeframes.	Access to oiled wildlife response equipment and personnel	Contract with AMOSC and OSRL for access to oiled wildlife and equipment	N/A	N/A	24-48 hours (AMOSC) 14 days (OSRL)	Minor	H	H	H	H	H	Positive environmental benefit gained from implementation of this control measure. The objective of oiled wildlife response is to prevent effects of an oil spill on environmental sensitivities.	The response capacity is small but the control effectiveness is generally high. BHP has access to this capability through contractual arrangements with AMOSC and OSRL. Control has minor cost implications.	Accept: Controls are practicable and the cost sacrifice is not grossly disproportionate to the environmental benefit gained.	<u>RS11.4.</u>
Administrative	Insufficient specialised personnel available – resourcing.	Access to more oiled wildlife responders.	Mobilise more oiled wildlife responders from around Australia and internationally.	N/A	N/A	14-21 days	Minor	H	H	H	H	H	Positive environmental benefit gained from implementation of this control measure. The objective of oiled wildlife response strategy is to prevent effects of an oil spill on environmental sensitivities.	The response capacity is small but the control effectiveness is generally high. BHP has access to this capability through contractual arrangements	Accept: Controls are practicable and the cost sacrifice is not grossly disproportionate to	<u>PS RS11.3, and PS RS11.4</u>

Risk Assessment				ALARP Assessment										Performance Standard					
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary			
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility							
	No access to suitable specialised equipment in reasonable timeframes.	Pre-deployment of oiled wildlife container and wildlife personnel on standby at Exmouth during operations.	On standby 24/7 during operations to expedite initiation of wildlife response.	Small	1	0-1 days	Major	H	H	Low	H	H	Positive environmental benefit gained from implementation of this control measure. The objective of oiled wildlife response is to prevent effects of an oil spill on environmental sensitivities. Scalable options for oiled wildlife response involve a pre-deployment and establishment of the oiled wildlife facility to be on standby, fully functional and capable of receiving oiled wildlife on Day 1 of an incident.	Dedicated standby oiled wildlife crews have substantial cost.	Reject: This control has major costs that are disproportionate to the potential environmental benefit that might be gained. DBCA is the lead organisation for OWR in State waters. BHP will act as the support organisation providing access to AMOSC and OSRL wildlife capability and any other requests by DBCA.	-			

5 Waste Management

Table 9: RS13 Waste Management Response Strategy Risk assessment including evaluation of effectiveness of controls, environmental benefit gained compared with practicability and ALARP summary

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
Eliminate	Negative environmental impact from the execution of this response strategy.	No waste management	Do nothing option	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No environmental benefit would be gained from this option; experience from past oil spills suggests that environmental sensitivities can be protected effectively when waste management operations are activated.	Waste management is practicable and the do nothing option is not considered within the external context (e.g. stakeholder views) to be a viable option.	Reject: Waste management is a recognised strategy for the mitigation of oil spill impacts.	-
Administrate	Response strategy executed adhoc with no real planning leading to ineffective response.	Waste management operations reviewed and managed by IMT through Incident Action Plan (IAP) process.	Within the first 24 hours, the BHP IMT will develop IAPs.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit from identification of the most effective response strategies with the least detrimental impacts. The review/evaluation of waste management operations will take place almost immediately in the event of a Level 2 spill. The waste management operations would be adapted based on real-time information regarding the spill incident.	Controls have effectiveness; are available, functional and reliable and in general are serviceable and compatible with other control measures. Controls have minor cost implications.	Accept: Controls are practicable and the cost sacrifice is not disproportionate to the environmental benefit gained.	PS RS13.3

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
	Response activities not considered in preparedness planning therefore not allowing for input into the NEBA.	Operational NEBA to include evaluation of requirement for implementation of waste management operations.	The waste management response strategy will be activated to prevent environmental impacts to sensitive environmental receptors.	N/A	N/A	0-2 hours	Minor	H	H	H	H	H	Positive environmental benefit from identification of the most effective response strategies with the least detrimental impacts. The Operational NEBA will be completed based on specific circumstances of the spill incident, using real-time information (spill trajectory modelling, spill observations, weather and sea state conditions etc.) to confirm the appropriate response strategies to adopt for protection of priority locations and sensitive receptors. Waste management will be activated to prevent/minimise environmental impacts to sensitive shorelines and shoreline receptors.			<u>PS RS13.2</u>
	No access to suitable specialised equipment in reasonable timeframes.	Mobilisation of equipment and personnel to conduct waste management response within 24 hours of notification by IMT following outcomes of first IAP and maintained regularly in IAP outcomes.	Timely implementation of waste management plan and contractor.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained from rapid response of waste management plant, equipment and resources from Dampier / Karratha.			<u>PS RS13.1 and PS RS13.5</u>
	Recovered waste is not handled or managed effectively or efficiently further impacting the environment.	Waste retrieved to be managed in accordance with the Waste Management Plan.	Ensures waste management policies and procedures are being followed.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained from rapid response of waste management plant, equipment			<u>PS RS13.6</u>

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
													and resources from Dampier / Karratha.			
	Poor understanding of the effectiveness of waste management and its impact on the environment.	Implement environmental monitoring to determine the ongoing acceptability of the environmental risk associated with waste management methods.	Environmental monitoring will be used to determine the effectiveness of waste management controls and techniques for removing waste oil from site.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained from environmental monitoring in understanding the effectiveness of waste management controls and techniques for removing waste oil from site. Outcomes of environmental monitoring will be used to inform waste management response strategy through the IAP's.			<u>PS RS13.7</u>
	Response activities impacting areas of cultural significance.	Waste management operations will avoid cultural heritage sensitivities.	Increases the potential that impacts to sensitive receptors will be prevented by avoiding areas of known cultural heritage significance.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained by taking into consideration any advice from State government agencies and spatial information to avoid impacts to cultural heritage sensitivities.			<u>PS RS13.8</u>
	Response continues with no end point or is removed early.	Response strategy activities continued until termination criteria met.	The waste management response strategy will continue to prevent environmental impacts to sensitive environmental receptors until the performance outcome has been achieved.	N/A	N/A	N/A	Minor	H	H	H	H	H	Positive environmental benefit gained from ensuring that the waste management response strategy continues until the performance outcome has been achieved.			<u>PS RS13.9</u>
Current Capability																
Administrative	No access to suitable specialised equipment in reasonable timeframes.	Access to waste management plant and equipment in place during operations.	Enables rapid response of waste management resources from Dampier / Karratha.	Large	Veolia / NWA	0-1 days	Moderate	H	H	H	H	H	Positive environmental benefit gained from implementation of this control measure. The objective of waste management is to	Control has high effectiveness; are available, functional and reliable and in general are serviceable and compatible with other control measures. Controls have minor cost implications for	Accept: Control is practicable and the cost sacrifice is not grossly disproportionate to the environmental benefit gained.	<u>PS RS 13.1 and PS RS13.4</u>

Risk Assessment				ALARP Assessment										Performance Standard		
Function	Risk	Control Measure	Rationale	Response Capacity	Units	Timing	Cost	Effectiveness (High / Low)					Environmental Benefit Gained		Practicability	ALARP Summary
								Availability	Functionality	Reliability	Survivability	Independence / Compatibility				
													prevent impacts to sensitive receptors by the removal of oiled waste from site.	operations but moderate to major costs if implemented.		
Scalable Options																
Administrate	No access to suitable specialised equipment in reasonable timeframes.	Access to more waste management plant and equipment.	Acquisition of more waste management plant and equipment from Perth and around Australia.	Small	As required	10 days	Moderate	H	H	H	H	H	Positive environmental benefit gained from ensuring that the waste management response strategy continues until the performance outcome has been achieved. Scalable options involve accessing more plant and equipment from Perth and if needed around Australia.	This control is effective and the cost of acquiring more plant equipment from Perth and around Australia would potentially have moderate cost implications. Cost during activation would be major.	Accept: Controls are practicable and the cost sacrifice is not grossly disproportionate to the environmental benefit gained.	PS RS 13.1 and PS RS13.4

Appendix F Relevant Persons Consultation

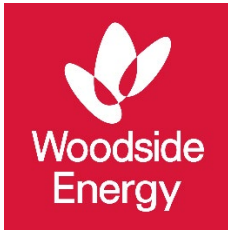


Table 1 and 2, Appendix F – Stybarrow Decommissioning and Field Management Environment Plan

Date: December 2023

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 Border Force (ABF)		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with ABF for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to Australia Border Force on 11 March 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 the Australia Border Force with the opportunity to provide feedback over a 20 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 11 March 2022, Woodside emailed ABF advising of the proposed activity (Appendix F, reference 1.25). • On 27 May 2022, Woodside emailed ABF advising of the proposed activity (Appendix F, reference 1.32.17) • 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 2.2.1) 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
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 11.8).	Woodside has addressed maritime security-related issues in Section 7 and 8 of this EP based on previous offshore activities. No additional measures or controls are required.

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Australian Fisheries Management Authority (AFMA)

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with AFMA for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to AFMA on 11 March 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 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed AFMA advising of the proposed activity (Appendix F, reference 1.24).
- On 27 May 2022, Woodside emailed AFMA advising of the proposed activity (Appendix F, reference 1.32.2)
- On 1 June 2022, AFMA responded advising that it had 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 could 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 27 July 2022, Woodside responded and confirmed that it had provided information to the Western Deepwater Trawl Fishery as well as 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 2.19) 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 2.19.1) 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.

As stated, the summary above demonstrates that Woodside's consultation with AFMA for the purpose of 11A(1) is complete. However, as per Woodside's ongoing commitment to consultation, engagement with AFMA continues as summarised below:

Ongoing consultation:

- 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
<ul style="list-style-type: none"> AFMA has requested Woodside consult with operators who have entitlements to fish within the proposed area. Whilst feedback has been received, there were no objections or claims. 	<p>Woodside has addressed AFMA's feedback, including confirming that Woodside 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> <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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Australian Hydrographic Office (AHO)</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with the AHO for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to AHO on 11 March 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 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed AHO advising of the proposed activity (Appendix F, reference 1.23).
- On 27 May 2022, Woodside emailed AHO advising of the proposed activity (Appendix F, reference 1.32.1)
- On 16 February 2023, Woodside emailed the AHO advising of the proposed activity (Appendix F, reference 2.15) 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 2.15.1) 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
<p>AHO acknowledged receipt of consultation emails.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside notes that AHO has acknowledged receipt of consultation information.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>Woodside will notify the AHO no less than four working weeks before operations commence, as referenced as PS 1.3 in this EP.</p> <p>No additional measures or controls are required.</p>

Australian Maritime Safety Authority (AMSA) - Marine Safety

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with AMSA for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to AMSA – Marine Safety on 11 March 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 AMSA – Marine Safety over a 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed AMSA advising of the proposed activity (Appendix F, Reference 1.21).
- On 16 March 2022, AMSA responded to Woodside requesting that AHO is contacted no less than four weeks before operations, with relevant details, 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. AMSA also:
 - 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 AIS unit.
 - provided contact details for Woodside to obtain a vessel traffic plot showing Automatic Identification System (AIS) traffic data.
- On 27 May 2022, Woodside emailed AMSA advising of the proposed activity (Appendix F, reference 1.32.1)
- On 27 July 2022, Woodside responded to AMSA advising it would:
 - 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.
 - Woodside also noted AMSA's feedback on the exhibition of appropriate lights and shapes and confirmed it will:
 - 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 2.15) and provided a Consultation Information Sheet.
- On 15 March 2023, Woodside sent a reminder email to AMSA advising of the proposed activity (Appendix F, reference 2.15.1) and provided shipping lane figures.

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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>AMSA has provided feedback and requested that:</p> <ul style="list-style-type: none"> AHO is contacted no less than four weeks before operations commence. the JRCC are notified at least 24-48 hours before operations commence for promulgation or radio navigation warnings. AMSA reminded Woodside of compliance obligations with the International Rules for Preventing Collisions at Sea (COLREGs) and provided contact details to obtain a vessel traffic plot showing Automatic Identification System (AIS) traffic data. 	<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 11.8).</p>	<p>Woodside notes previous AMSA feedback for regional activities and commits to notify AMSA’s JRCC at least 24–48 hours before operations commence for each survey, as referenced as PS 1.6 in this EP.</p> <p>Woodside will notify the AHO no less than four working weeks before operations commence, as referenced as PS 1.3 in this EP.</p> <p>No additional measures or controls are required.</p>
Australian Maritime Safety Authority (AMSA) – Marine Pollution		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with AMSA- Marine Pollution for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. Consultation information provided to AMSA – Marine Pollution on 11 March 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 AMSA – Marine Pollution with the opportunity to provide feedback over a 20 month period. <p>Summary of information provided and record of consultation:</p>		

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- On 11 March 2022, Woodside emailed AMSA – Marine Pollution advising of the proposed activity (Appendix F, reference 1.22).
- On 27 May 2022, Woodside emailed AMSA advising of the proposed activity (Appendix F, reference 1.32.24)
- On 5 July 2023, Woodside emailed AMSA – Marine Pollution advising of the proposed activity (Appendix F, reference 2.58) and provided a copy of the Stybarrow Decommissioning and Field Management - Oil Pollution First Strike Plan.

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 AMSA – Marine Pollution with a copy of the Oil Pollution First Strike Plan Woodside and has addressed oil pollution planning and response at Appendix D.</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 11.8).</p>	<p>Woodside has addressed oil pollution planning and response at Appendix D.</p> <p>No additional measures or controls are required.</p>

Department of Climate Change, Energy, the Environment and Water Agriculture (DCCEEW) / Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity and Fisheries (formerly DAWE)

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DCCEEW/DAFF for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to DAWE on 11 March 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 20 month period.

Summary of information provided and record of consultation:

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- On 11 March 2022, Woodside emailed DAWE advising of the proposed activity (Appendix F, reference 1.20).
- On 27 May 2022, Woodside emailed DAWE advising of the proposed activity (Appendix F, reference 1.32.9)
- On 16 February 2023, Woodside emailed DCCEE / DAFF 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 DCCEE / DAFF advising of the proposed activity (Appendix F, reference 2.21.1) 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
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 11.8).</p>	<p>The Environment Plan demonstrates that the proposed activities are 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 planned activities (Section 4.5). While impacts to Commonwealth Marine Parks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 8.2 of this EP.</p> <p>The Environment Plan demonstrates that there are no known underwater heritage sites or shipwrecks within the Petroleum Activities Area and identifies that there are no credible impacts to the values of any underwater heritage or shipwrecks as a result of planned activities (Section 4.7.1). While impacts to underwater heritage sites or shipwrecks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to</p>

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		<p>respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 8.2 of this EP.</p> <p>Vessels are required to comply with the Australian Biosecurity Act 2015, specifically the Australian Ballast Water Management Requirements (as defined under the Biosecurity Act 2015) (aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments) to prevent introducing IMS. Vessels will be assessed and managed to prevent the introduction of invasive marine species in accordance with Woodside's Invasive Marine Species Management Plan (Section 8.5 of this EP).</p> <p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Department of Defence (DoD)</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DoD for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to DoD on 11 March 2022 based on their function, interest and activities.
- Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DoD for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:
- Woodside has addressed and responded to DoD over a 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed DoD advising of the proposed activity (Appendix F, Reference 1.4).
- On 6 April 2022, DoD responded and provided the following response:
 - WA-32-L is located within the North West Exercise Area (NWXA) and restricted airspace.
 - Woodside was advised that unexploded ordnance (UXO) may be present on and in the sea floor within the NWXA. Woodside must, therefore, inform itself as to the risks associated with conducting activities in the area (for example, the detonation of UXO). Additionally, Woodside was advised that:
 - all activities in the area are conducted at its own risk; and
 - the Commonwealth of Australia, represented by the DoD, takes no responsibility for:
 - reporting the location and type of UXO that may be in the areas
 - identifying or removing any UXO from these areas
 - any loss or damage suffered or incurred by Woodside or any third party arising out of, or directly related to, UXO in the area.
 - Defence requires a minimum of five weeks notification prior to the commencement of activities to ensure Woodside activities do not conflict with Defence training.
 - Any activities undertaken within Restricted Airspace must comply with the relevant NOTAM restrictions. Some projects may also be required to promulgate a NOTAM for any temporary structure or need to establish a Danger Area to encompass any permanent rig.
 - Please ensure continued liaison with the AHO for Notices to Mariners (NOTMARs), in particular ensure that the AHS is notified three weeks prior to the actual commencement of activities. This information is critical to maritime safety and reduces negative impacts on other maritime users.
- On 8 April 2022, Woodside responded and noted that:
 - WA-32-L is located within the NWXA and restricted airspace
 - UXO may be present on and in the sea floor within the NWXA
 - all activities in the area are conducted at Woodside's own risk

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- the Commonwealth of Australia, represented by the DoD, takes no responsibility for:
 - reporting the location and type of UXO that may be in the areas
 - identifying or removing any UXO from these areas
 - any loss or damage suffered or incurred by Woodside or any third party arising out of, or directly related to, UXO in the area.
 - Woodside will notify Defence a minimum of five weeks prior to the commencement of activities to ensure Woodside activities do not conflict with Defence training
 - Woodside will comply with relevant NOTAM restrictions, noting that some projects may also be required to promulgate a NOTAM for any temporary structure or need to establish a Danger Area to encompass any permanent rig.
 - Woodside will continue to liaise with the AHO for NOTMARs and will notify the AHS no less than four weeks prior to the commencement of activities.
- On 27 May 2022, Woodside emailed DoD advising of the proposed activity (Appendix F, reference 1.32.10)
- On 16 February 2023, Woodside emailed DoD advising of the proposed activity (Appendix F, reference 2.16) 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 2.16.1)

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DoD provided advice including noting the location of activities within the NWXA, the potential presence of UXOs, activity risks and responsibilities, and noted the activity notification request includes reporting and notification requirements, including those to DoD and AHO.</p> <p>DoD has requested:</p> <ul style="list-style-type: none"> ● a minimum of five weeks notification prior to the commencement of activities ● liaise with the AHO for NOTMARs ● Woodside to notify the AHS of the activities three weeks prior to commencement. <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside has addressed DoDs feedback, including:</p> <ul style="list-style-type: none"> ● providing DoD activity notification five weeks prior to commencement (PS 1.5) and AHO four weeks prior to commencement (PS 1.3) of activities; ● noted the requirement and contact details provided by DoD to engage with Airservices Australia if the restricted airspace is activated; and ● advised that Woodside will confirm restricted air space status with DoD as part of the commencement of activity notification. <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 11.8).</p>	<p>Woodside has addressed the DoD’s expectations on notifications – Defence restricted air space and AHO (PS 1.5 and PS 1.3). AHO have been consulted on the activity and are included in Woodside’s activity notification protocols. AHO will be notified four weeks prior to the start of activities.</p> <p>Woodside considers the measures and controls in the EP are appropriate.</p>

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Department of Primary Industries and Regional Development (DPIRD)		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DPIRD for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to DPIRD on 11 March 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 20 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 11 March 2022, Woodside emailed DPIRD advising of the proposed activity (Appendix F, reference 1.17). • On 27 May 2022, Woodside emailed DPIRD advising of the proposed activity (Appendix F, reference 1.32.11) • On 16 February 2023, Woodside emailed DPIRD advising of the proposed activity (Appendix F, reference 2.20) 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 2.20.1) 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
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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p>

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		No additional measures or controls are required.
Department of Transport (DoT)		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DoT for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to Department of Transport on 11 March 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 Department of Transport over a 20 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 11 March 2022, Woodside emailed DoT advising of the proposed activity (Appendix F, reference 1.6). • On 11 March 2022, Department of Transport sent an automated email acknowledging receipt of Woodside's email and advised it would be actioned as soon as possible by the relevant officer. • On 23 March 2022, DoT responded and asked that, if there is a risk of a spill impacting State waters from the activity, for Woodside to ensure that the DoT is consulted as outlined in the DoT <i>Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements</i> (DoT, 2020). • On 27 May 2022, Woodside emailed DoT advising of the proposed activity (Appendix F, reference 1.32.6) • On 7 June 2022, DoT responded to Woodside and provided advice on consultation if there was a risk that a spill could impact State waters from the proposed activity. • On 27 July 2022, Woodside responded to DoT confirming that it acknowledged DoT's consultation requirements (Appendix 6 of the Department of Transport Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements, July 2020) and would provide a copy of the OPEP (Appendix D) for consultation. • On 5 July 2023, Woodside emailed DoT with a copy of the Stybarrow Decommissioning and Field Management - Oil Pollution First Strike Plan (Appendix F, reference 2.57) • On 8 August 2023, DoT responded to Woodside to advise it had no queries about the Stybarrow Decommissioning and Field Management - Oil Pollution First Strike Plan. However, did request a final accepted version when available. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
The DoT provided feedback, including:	Woodside has addressed the DoT's feedback, confirming that if there is a risk of a spill impacting State waters, DoT will be consulted.	Woodside will provide DoT with a copy of the approved Oil Pollution First Strike Plan

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<ul style="list-style-type: none"> • advice on consultation if there was a risk that a spill could impact State waters from the proposed activity. • it had no queries about the Oil Pollution First Strike Plan. • requested a final accepted version of the Oil Pollution First Strike Plan when available. 	<p>Woodside has addressed oil pollution planning and response at Appendix D.</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 11.8).</p>	<p>(Appendix A of the OPEP) after acceptance).</p> <p>Woodside will consult DoT if there is a spill impacting State water from the proposed activity, as referenced in the Oil Pollution First Strike Plan (Appendix A of the OPEP) (at Appendix D of this EP).</p> <p>Woodside considers the measures and controls in the EP are appropriate.</p>
Department of Planning, Lands and Heritage (DPLH)		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DPLH for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 DPLH on 16 February 2023 based on their function, interest and activities. • Woodside has addressed and responded to DPLH over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 16 February 2023, Woodside emailed DPLH advising of the proposed activity (Appendix F, reference 2.22) and provided a Consultation Information Sheet. • On 23 February 2023, DPLH emailed Woodside to advise the subsea petroleum licences are situated within Commonwealth waters beyond the State's control and no formal response was necessary. • On 16 March 2023, DPLH emailed Woodside and advised it had no comment/feedback to provide on proposed activities at these sites. • On 18 March 2023, Woodside responded and thanked DPLH for its advice that it has no feedback on the proposed activities. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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<p>The DPLH advised it had no comment to provide on proposed activities.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside notes the DPLH's advice that it has no comment to provide on proposed activities.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will supply its Management of Change and Revision process (see Section 11.8).</p>	<p>The Environment Plan demonstrates that there are no known underwater heritage sites or shipwrecks within the Petroleum Activities Area and identifies that there are no credible impacts to the values of any underwater heritage or shipwrecks as a result of planned activities (Section 4.7.1).</p> <p>While impacts to underwater heritage sites or shipwrecks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 8.2 of this EP.</p> <p>No additional measures or controls are required.</p>
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Commonwealth and WA State Government Departments or Agencies – Environment

Director of National Parks (DNP)

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DPLH for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to DNP on 11 March 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 DNP over a 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed DNP advising of the proposed activity (Appendix F, Reference 1.18).
- On 8 April 2022, Woodside emailed DNP reminder email seeking feedback (Appendix F, Reference 1.27).
- On 27 May 2022, Woodside emailed DNP advising of the proposed activity (Appendix F, Reference 1.32.3)
- On 26 July 2022, DNP responded to Woodside requesting further information in relation to:
 - The removal of the H4 flowline and the potential release of 14 m3 (approximately 88 barrels) into the marine environment. DNP noted the Information is to contain dispersal modelling, chemical makeup of the hydrocarbons, risk to marine park natural values (noting species below) and mitigations.
 - The assessment undertaken to guide decisions to remove or leave equipment in situ including, but not limited, environmental risks / benefits analysis.
 - DNP also requested or noted:
 - Proposed activities may directly affect the values present in the marine parks and should be factored into the environment plan.
 - 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 Ningaloo Coast World Heritage Area.
 - The environment plan should demonstrate best practice in choice of activities and mitigating the activity's impact upon the environment.
 - Biologically important areas (BIAs) are present or nearby to the Operational Area.
 - Key Ecological Features (KEF) 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.
 - There may also be cultural values present providing advice on consultation with Indigenous peoples and representative organisations where sea country could be affected by the proposed activities.
 - DNP Marine Compliance Duty Officer is to be advised within 24 hours, in the event that a marine pollution event is likely to impact on a marine park and, further, it may request daily or weekly Situation Reports, depending on the scale and severity of the pollution incident.

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- DNP also provided guidance on resource materials to assist in the development of the environmental plan 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 responded to DNP and provided the following information:
 - The H4 flowline was blocked during production following a sand screen failure in 2010. The contents of the flowline are production fluids (oil, gas formation water), sand and hydrates. The flowline is proposed to be unblocked and fully recovered. Methods to achieve this are in development with industry specialists. It committed to providing the DNP with an assessment of potential marine impacts and mitigation measures when the Oil Pollution Emergency Plan (OPEP) is complete.
 - Woodside also provided a summary of the decommissioning assessment options and criteria, and high-level outcomes.
 - Woodside also confirmed:
 - DNP's expectations and contact details for consultation in the event of an incident that was likely to impact a marine park had been included in the environmental plan.
 - Potential impacts to marine park values had been assessed in developing the environment plan.
 - An assessment of planned activities, and mitigating the activity's impact upon the environment had been included in the environment plan.
 - BIAs had been assessed in the environment plan.
 - KEFs had been assessed in the environment plan.
 - Information had been provided to the Yamatji Marlpa Aboriginal Corporation on behalf of the Nganhurra Thanardi Garrbu Aboriginal Corporation as part of consultation activities.
 - Woodside acknowledged references provided by DNP to support development of the environment plan, these being:
 - The North-west Marine Parks Network Management Plan 2018 (management plan)
 - The Australian Marine Parks Science Atlas.
- On 28 July 2022, DNP emailed Woodside, noting Woodside's advice that the matters raised by DNP will be captured in the EP and that Woodside will provide an update in regards to the OPEP when it's available. DNP also requested a copy of the draft EP, or parts that relate to the assessment of decommissioning options.
- On 29 July 2022, Woodside emailed DNP and advised:
 - it is unable to provide more details of the options assessment, in advance of the EP being finalised.
 - Woodside suggested the alternative of providing DNP with relevant references when the EP is finalised and has been submitted to NOPSEMA, allowing DNP information in order to provide informed feedback.
 - Woodside confirmed that future feedback from DNP would be reviewed by Woodside and included in the final EP for assessment and acceptance by NOPSEMA.
- On 29 July 2022, DNP responded to Woodside and advised that this was no problem and to advise when the EPs are available via NOPSEMA.

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- On 26 August 2022, Woodside emailed DNP to advise that the H4 Flowline removal activity has been removed from the scope of activities for the Stybarrow P&A Environment Plan and will now be included in the Stybarrow Decommissioning and Field Management Environment Plan (EP).
 - Woodside advised that the Decommissioning and Field Management EP is currently under assessment and it would let DNP know when the information is updated in the EP and available for review, as well as ensure DNP's feedback provided to date is carried over to the EP.
- On 16 February 2023, Woodside emailed DNP advising of the proposed activity considering potential risks to Australian Marine Parks (AMP) (Appendix F, reference 2.23), 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 2.23.1) 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 overlap any AMPs and there are no authorisation requirements from the DNP.
 - Requested 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 has worked closely with NOPSEMA to develop and publish a guidance note and included 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.
 - clearly demonstrate that the activity will not be inconsistent with the management plan.
 - The DNP also noted/requested:
 - 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.
 - to be made aware of incidences which occur within a marine park or are likely to impact on a marine park as soon as possible.
 - notification to be provided to the 24-hour Marine Compliance Duty Officer and should include:
 - titleholder details
 - time and location of the incident (including name of marine park likely to be effected)
 - proposed response arrangements as per the Oil Pollution Emergency Plan (e.g. dispersant, containment, etc.)
 - confirmation of providing access to relevant monitoring and evaluation reports when available; and
 - contact details for the response coordinator.

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- The DNP noted it may request daily or weekly Situation Reports, depending on the scale and severity of the pollution incident.
- On 4 May 2023, Woodside responded to the DNP thanking it for its response, including:
 - confirmation that planned activities do not overlap any AMPs, and as such there are no approvals required from DNP
 - noted that the nearest marine turtle nesting site is approximately 39 km from the Operational Areas, which exceeds the 20 km buffer set by the National Light Pollution Guidelines (NLPG)
 - confirmed that Woodside has increased the buffer from turtle nesting beaches to 20 km as part of its controls for the proposed EP.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>DNP provided the following feedback:</p> <ul style="list-style-type: none"> • requested further information on flowline and potential release during the proposed activity. • noted there may be cultural values present requiring consultation with Indigenous peoples and representative organisations where sea country could be affected by the proposed activities. • requested that the buffer from turtle nesting beaches is increased from 12 km to 20 km, to support greater consistency with the 'Recovery Plan for Marine Turtles in Australia'. • confirmed that planned activities do not overlap any AMPs and there are no authorisation requirements from the DNP. • asked to be made aware of incidences which occur within a marine park or are likely to impact on a marine park as soon as possible. • requested notification to be provided to the 24 hour Marine Compliance Duty Officer. 	<p>Woodside has addressed the DNP's feedback, including:</p> <ul style="list-style-type: none"> • providing additional information regarding the flowline, including that the flowline is proposed to be unblocked and fully recovered. • providing a summary of the decommissioning assessment options and criteria, and high-level outcomes. • advised that information had been provided to the Yamatji Marlpa Aboriginal Corporation (YMAC) on behalf of the Nganhurra Thanardi Garbu Aboriginal Corporation as part of consultation activities. • confirmed that Woodside has increased the buffer from turtle nesting beaches to 20 km for the proposed EP. • confirmed that planned activities and the Operational Area for this EP do not overlap any AMPs; • noted DNP's advice that it had no objections or claims with respect to the proposed activity; and • confirmed that Woodside will contact the DNP if details regarding the activity change and result in an overlap with or new impact to a marine park, or for emergency responses. • noted that the nearest marine turtle nesting site is approximately 39 km from the Operational Areas, which exceeds the 20 km buffer set by the National Light Pollution Guidelines (NLPG). • confirmed that Woodside has increased the buffer from turtle nesting beaches to 20 km as part of its controls for the proposed 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 11.8).</p>	<p>Woodside has increased the buffer from turtle nesting beaches to 20 km for the proposed EP.</p> <p>The Environment Plan demonstrates that the proposed activities are 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 planned activities (Section 4.5). While impacts to Commonwealth Marine Parks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 8.2 of this EP.</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> <p>Woodside will ensure DNP is made aware of any incidences within a marine park for the activity, as per the commitment in the Oil Pollution First Strike Plan (Appendix D).</p>
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		Woodside considers the measures and controls in the EP are appropriate.
Ningaloo Coast World Heritage Advisory Committee (NCWHAC)		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with NCWHAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to NCWHAC on 28 March 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 NCWHAC over a 20 month period.

Summary of information provided and record of consultation:

- On 28 March 2022, Woodside emailed NCWHAC advising of the proposed activity (Appendix F, reference 1.29).
- On 27 May 2022, Woodside emailed NCWHAC advising of the proposed activity (Appendix F, reference 1.32.19)
- On 16 February 2023, Woodside emailed NCWHAC advising of the proposed activity considering potential risks to Australian marine Parks (Appendix F, reference 2.13), 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 2.13.1) and provided a Consultation Information Sheet.
- On 15 April 2023, NCWHAC responded to Woodside via NOPSEMA (in two letters dated 13 September 2022 and 15 April 2023) noting additional potential impacts to the outstanding universal value (OUV) within and adjacent to NCHWA. NCWHAC:
 - Noted concerns related to towing of equipment through the NCWHAC
 - Requested that known migratory periods informed measures to avoid migratory times and routes
 - Requested further information on routes taken to transport materials. Currently no indication of how the removed equipment will be taken away, including the size of the vessel; total number of journeys necessary for the removal; and time of year the vessel will be taking this route.
 - Requested a review other infrastructure left in situ near the site to understand cumulative impacts from infrastructure left in situ.
 - Noted concerns with new advice in relation to the unplanned loss of buoyancy of Stybarrow - (noting industry issues with maintaining RTM buoyancy across several current offshore projects). Requesting NOPSEMA review the adequacy of industry post-production maintenance and removal for all current and future environment plans.
 - Requiring further clarification on noise emissions from the proposed activity.
 - Noted traversing of the NCWHAC increases the likelihood of the introduction of Invasive Marine Species. Requesting NOPSEMA review information on the equipment being exempt from IMS management measures and apply the highest possible IMS mitigation.
- On 6 June 2023, Woodside responded to the NCWHAC regarding its comments raised with respect to the proposed decommissioning of the Stybarrow field. Woodside advised:

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- It has considered the potential impacts associated with an unplanned loss of hydrocarbons to the marine environment due to vessel collision and will implement appropriate controls to mitigate against an unplanned release of hydrocarbons.
- Woodside has determined that an unplanned loss of hydrocarbons represents a moderate current risk rating that is unlikely to result in potential impact greater than localised, minor and temporary disruption to a small proportion of the population and no impact on critical habitat or activity.
- The proposed activities are outside the boundaries of the NCWHA and there are no credible direct impacts to the values of the NCWHA.
- There are no current activities planned that would require vessels to transit directly through the Ningaloo Marine Park.
- Collisions with migratory species from vessel collision are unlikely to occur on the basis that during infrastructure removal activities vessels will operate at slow speeds, and whilst transiting between the OA and port, vessels will implement controls aligned to industry best practice and legislative requirements including compliance with requirements under the EPBC Act.
- There is no planned vessel transit route through the Ningaloo Marine Park or Exmouth Gulf.
- A CSV will be the primary vessel used to remove equipment from the field.
- Woodside has considered the potential impacts from noise emissions in the EP and has assessed each control against its ALARP process to identify controls that when implemented are considered to manage the impacts on marine fauna to ALARP.
- On 28 June 2023, Woodside responded to NCWHAC's letter in relation to this EP and noted:
 - Revision 0 of this EP is available on NOPSEMA's website.
 - Woodside was preparing to submit a further revision of this EP with recent changes (Revision 1) and provided an updated Consultation Information Sheet to the NCWHAC on 16 February 2023.
 - The location and duration described in the revision remained the same, with no material changes.
 - Woodside responded to NCWHAC's claims regarding:
 - Impacts to migratory species
 - Proposed material transport route
 - How equipment will be removed
 - Further clarification on unplanned risks
 - Clarification on the term 'repair'
 - Oily water discharges
 - Baseline information
 - Clarity on chemicals
 - Management of cumulative impacts from infrastructure.
 - Woodside requested any further feedback was provided at NCWHAC's earliest convenience.

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- Woodside noted NCWHAC's previous advice that its feedback will be provided directly to NOPSEMA; Woodside requested that any correspondence to NOPSEMA is requested to be passed onto Woodside.

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>The NCHWAC provided feedback with respect to the proposed activity. It noted potential impacts to the OUVs within and adjacent to the NCHWA from:</p> <ul style="list-style-type: none"> • Oil spill / other discharges • Collisions • Cumulative impacts • Noise • Invasive marine species • Atmospheric emissions 	<p>Woodside has addressed the NCWHAC's feedback, including advising:</p> <ul style="list-style-type: none"> • It has considered the potential impacts associated with an unplanned loss of hydrocarbons to the marine environment due to vessel collision and will implement appropriate controls to mitigate against an unplanned release of hydrocarbons. • Woodside has determined that an unplanned loss of hydrocarbons represents a moderate current risk rating that is unlikely to result in potential impact greater than localized, minor and temporary disruption to a small proportion of the population and no impact on critical habitat or activity. • The proposed activities are outside the boundaries of the NCWHA and there are no credible direct impacts to the values of the NCWHA. • There are no current activities planned that would require vessels to transit directly through the Ningaloo Marine Park. • Collisions with migratory species from vessel collision are unlikely to occur on the basis that during infrastructure removal activities vessels will operator at slow speeds, and whilst transiting between the OA and port, vessels will implement controls aligned to industry best practice and legislative requirements including compliance with requirements under the EPBC Act. • CSV will be primary vessel to remove equipment. • Assessment has occurred on migratory species and controls aligned to best practice will be implemented to mitigate against any potential impacts. • An updated consultation information sheet (February 2023) outlines further information about key risks and impacts and proposed mitigation measures. • No repair activities will be undertaken as part of continued field management. • Oily water discharge will only be temporary and minor and in compliance with Australian Marine Order 91 and MARPOL convention. • Assessment of seabed disturbance and surveys and studies to inform impact assessment are described in EP (Rev 0). • No planned specific chemical use required. <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</p>	<p>The Environment Plan demonstrates that the proposed activities are outside the boundaries of the Ningaloo Marine Park and identifies that there are no credible impacts to the values of the Ningaloo Marine Park (Section 4.5). While impacts to the Ningaloo Marine Park are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 8.2 of this EP.</p> <p>No additional measures or controls are required.</p>
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received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).

Department of Biodiversity, Conservation and Attractions (DBCA)

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DBCA for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to DBCA on 11 March 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 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed DBCA advising of the proposed activity (Appendix F, reference 1.3).
- On 21 March 2022, DBCA responded and advised it had no comments on proposed activities in relation to its responsibilities under the *Conservation and Land Management Act 1984* and *Biodiversity Conservation Act 2016*.
- On 8 April 2022, Woodside sent a reminder email to DBCA advising of the proposed activity (Appendix F, reference 1.30).
- On 27 May 2022, Woodside emailed DBCA advising of the proposed activity (Appendix F, reference 1.32.4)
- On 2 June 2022, DBCA responded to Woodside advising it had no comments in relation to its responsibilities under the *Conservation and Land Management Act 1984* and *Biodiversity Conservation Act 2016* based on the information provided by Woodside.
- On 27 July 2022, Woodside responded to DBCA acknowledging its advice.
- On 16 February 2023, Woodside emailed DBCA advising of the proposed activity (Appendix F, reference 2.24) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside emailed DBCA advising of the proposed activity (Appendix F, reference 2.24.1) and provided a Consultation Information Sheet.
- On 16 March 2023, DBCA responded, noting it had provided feedback previously on proposed activities. DBCA had several comments specific to the activities proposed in the information sheet:
 - DBCA requested that all tow routes proposed avoid CALM Act waters (i.e., Murion Islands Marine Management Area) where possible to minimise the risk of impacts on the ecological and social values within this area.
 - Should Woodside have any additional information in relation to its monitoring or oil spill response preparedness for these decommissioning activities for DBCA's information, this would be welcome.

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- Woodside should be aware that any activities requiring access to reserves managed by DBCA under the CALM Act or requiring the taking / disturbance of threatened fauna listed under the BC Act in State waters may require additional approvals under this legislation, and early consultation with DBCA is recommended.
- On 1 June 2023, Woodside responded to DBCA advising:
 - Infrastructure including the Stybarrow DTM is planned to be recovered on title at the Stybarrow field.
 - Noted DBCA’s feedback on undertaking activities in proximity to ecologically sensitive receptors including marine parks and other reserves managed by DBCA under the CALM Act.
 - Advised in accordance with Regulation 12(3) and 13(3) of the Environment Regulations 2009 of the OPGGS Act, Woodside’s EPs describe the existing environment that may be affected by the activity during planned and unplanned activities. When describing the existing environment Woodside includes details of the particular values and sensitivities of the environment within and in proximity to operational areas and the EMBA for impact assessment and risk evaluation.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DBCA advised that it had previously provided feedback on proposed activities and requested tow routes avoided CALM waters where possible.</p> <p>DBCA also requested any additional information in relation to oil spill monitoring and response preparedness and advised activities requiring access to reserves may require additional approvals.</p>	<p>Woodside has addressed DBCA’s feedback, including:</p> <ul style="list-style-type: none"> ● Infrastructure including the Stybarrow DTM is planned to be recovered on title at the Stybarrow fields, which will be managed under a separate EP. ● Noted DBCA’s feedback on undertaking activities in proximity to ecologically sensitive receptors including marine parks and other reserves managed by DBCA under the CALM Act. ● Advised in accordance with Regulation 12(3) and 13(3) of the Environment Regulations 2009 of the OPGGS Act, Woodside’s EPs describe the existing environment that may be affected by the activity during planned and unplanned activities. When describing the existing environment Woodside includes details of the particular values and sensitivities of the environment within and in proximity to operational areas and the EMBA for impact assessment and risk evaluation. <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 11.8).</p>	<p>The Environment Plan demonstrates that the proposed activities are outside the boundaries of a proclaimed State Marine Park and identifies that there are no credible impacts to the values of any State Marine Parks as a result of planned activities (Section 4.5). While impacts to Commonwealth Marine Parks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 8.2 of this EP.</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)		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DISER for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to DISER on 11 March 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 20 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 11 March 2022, Woodside emailed DISR advising of the proposed activity (Appendix F, reference 1.19). • On 27 May 2022, Woodside emailed DISR advising of the proposed activity (Appendix F, reference 1.32.12) • 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 2.2.1) and provided a Consultation Information Sheet. • On 4 May 2023, Woodside had a meeting with DISR 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
No feedback, objections or claims received despite follow up.	<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. 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 11.8).</p>	No additional measures or controls are required.
Department of Mines, Industry Regulation and Safety (DMIRS)		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with DMIRS for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to DMIRS on 11 March 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 21 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed DMIRS advising of the proposed activity (Appendix F, reference 1.5).
- On 7 April 2022, DMIRS responded by email and provided the following feedback:
 - 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).
 - did not require further information at this stage.
 - requested pre-start and cessation of activity notifications.
 - provided advice on consultation in the event that an incident could potentially impact on any land or water under State jurisdiction.
- On 8 April 2022, Woodside responded with the following response:
 - noted DMIRS acknowledgement that the EP would be assessed by NOPSEMA
 - noted DMIRS required no further information
 - confirmed it would notify DMIRS prior to and following the cessation of activities
 - confirmed the EP would include information about the reporting of environmental incidents that could potentially impact on any land or water in State jurisdiction, including requested contact details for DMIRS.
 - noted that feedback on State waters EPs is outside the scope of this EP.
- On 27 May 2022, Woodside emailed DMIRS advising of the proposed activity (Appendix F, reference 1.32.5)
- On 22 June 2022, DMIRS responded to Woodside advising they did not require further information at this stage. DMIRS noted that proposed activities would be 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 requested pre-start and cessation of activity notifications and 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 to DMIRS and provided the following feedback:

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<ul style="list-style-type: none"> ○ Noted DMIRS acknowledgement that proposed activities fell under Commonwealth jurisdiction. ○ Noted that DMIRS did not require further information at this stage. ○ Confirmed that DMIRS would be notified prior to and upon activity completion. ○ Noted DMIRS' consultation expectations in the event that an incident could potentially impact on any land or water under 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 2.2.1) 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 noted that proposed activities would be assessed by NOPSEMA but requested notifications for both the start and conclusion of activities and provided advice on consultation in the event of an incident.</p>	<p>Woodside has addressed DMIRS's feedback including confirming that it will provide notifications to DMIRS prior to the commencement and at the end of the 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 11.8).</p>	<p>Woodside will provide notifications to DMIRS prior to the commencement and at the end of the activity, as referenced as referenced at Section 11.10.2.1 of this EP.</p> <p>Woodside considers the measures and controls in the EP are appropriate.</p>
<p>Commonwealth Commercial fisheries and representative bodies</p>		
<p>North West Slope Trawl Fishery</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with the North West Slope and Trawl Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 North West Slope and Trawl Fishery on 17 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided North West Slope and Trawl Fishery with the opportunity to provide feedback over a 10 month period.

Summary of information provided and record of consultation:

- On 17 February 2023, Woodside emailed licence holders 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 licence holders advising of the proposed activity (Appendix F, reference 2.3.1) 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
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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>

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Western Deepwater Trawl Fishery		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Western Deepwater Trawl Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 11 March 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 20 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 11 March 2022, Woodside emailed Western Deepwater Trawl Fishery advising of the proposed activity (Appendix F, reference 1.16). • On 27 May 2022, Woodside emailed Western Deepwater Trawl Fishery advising of the proposed activity (Appendix F, reference 1.32.16) • On 17 February 2023, Woodside emailed licence holders 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 licence holders advising of the proposed activity (Appendix F, reference 2.3.1) 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

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<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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
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Western Tuna and Billfish Fishery

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Western Tuna and Billfish Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Western Tuna and Billfish Fishery on 17 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Western Tuna and Billfish Fishery with the opportunity to provide feedback over a 9 month period.

Summary of information provided and record of consultation:

- On 17 February 2023, Woodside emailed licence holders 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 licence holders advising of the proposed activity (Appendix F, reference 2.3.1) 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
<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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Commonwealth Fisheries Association (CFA)</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with CFA for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to CFA on 11 March 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 CFA with the opportunity to provide feedback over a 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed CFA advising of the proposed activity (Appendix F, Reference 1.13).
- On 27 May 2022, Woodside emailed CFA advising of the proposed activity (Appendix F, Reference 1.32.18)
- On 16 February 2023, Woodside emailed the CFA 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 CFA advising of the proposed activity (Appendix F, reference 2.17.1) 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
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<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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Tuna Australia</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Tuna Australia for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to Tuna Australia on 11 March 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 Tuna Australia over a 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed Tuna Australia advising of the proposed activity (Appendix F, Reference 1.11).
- On 17 June 2022, Tuna Australia provided the following feedback on the proposed activity:
 - 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 Billfish Fishery (WTBF).
- On 1 July 2022, Tuna Australia emailed Woodside:
 - 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, with potential for spatial conflict arising from Woodside's planned activities.
 - drew Woodside's attention to the importance of the Leeuwin current as an important fauna distribution feature, including the target species of the WTBF.

In addition, Tuna Australia made the following claims/requests:

- It is not evident from the risk management plan that these impacts have been considered or mitigated to an extent that would not impact tuna quality. We would like to see more specific mitigation detail regarding this in the relevant risk assessments.
- A nuance of longline fishing is that the gear is set to drift with the currents and weather influences. Fishers have very little control over the distance and direction of the drift until they haul the gear. The risk management plans speak in general terms about cautionary areas, exclusion zones and notices to mariners. We would like to understand how Woodside contracted vessels in these areas can deconflict themselves from drifting longline gear should it enter the Operational Area

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- The risk assessments are silent on potential impacts on the electrical and acoustic interferences that may be generated by machinery or vessels used in these activities. This may impact on fishing vessel instrumentation, navigation systems and fish detecting equipment. Is there likely to be any undue acoustic or frequency disturbances produced by these proposed activities?
- For the activities identified in this proposal, Tuna Australia stated it would like to be reassured that these are done in the most expeditious timeframe and with utmost regard to the marine environment to maintain the integrity of the marine resource and impacts on other lawful users.
- Tuna Australia provided an invoice for professional services fees for the consultation activity undertaken.
- On 29 July 2022, Woodside responded to Tuna Australia and:
 - acknowledged the feedback provided by Tuna Australia on behalf of its members on current and potential future fishing activities.
 - provided additional information on expected marine discharges and seabed disturbances.
 - provided additional information on the administration of and access to the safety exclusion zones and precautionary areas, as well as opportunities to establish on-water communications protocols to ensure the safety of all marine users.
 - advised that acoustic impacts will be limited to vessel noise and noises associated with cutting activities at the seabed.
 - 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 2.18) 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 2.18.1) 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, and:
 - An overview of Tuna Australia's functions, interests and activities as well as the organisation's company objectives.
 - The geographic areas that Tuna Australia represents by membership Statutory Fishing Rights
 - A recommendation that project proponents also engage with the Australian Southern Bluefin Tuna Industry Association for any proposals in the Southern Bluefin Tuna fishing area.
 - The position that Tuna Australia considers itself a 'relevant person' consistent with NOPSEMA guidelines.
 - Tuna Australia requested:
 - Tuna Australia be contacted when any proposed activity has the potential to impact vessel navigation, fishing activities, and/or the conservation of fish resources consistent with the Offshore Petroleum and Greenhouse Gas Storage Act 2006.
 - A map from proponents of the proposed activity to determine if its member interests may be affected on a case-by-case basis.
 - Where potential effects exist, there is a need for a service agreement. Tuna Australia advised it can no longer coordinate consultation with offshore energy activities on behalf of our members without a service agreement in place. Tuna Australia requests proponents execute our services agreement and provide information in a written succinct manner including estimated boundaries for extent of planned activity impacts (i.e. artificial light, noise, discharges etc) as well as activities within the operational area. This advice will be distributed to members and non-members holding SFRs in the Eastern (114 concession holders) and

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Western (61 concession holders) Tuna and Billfish Fisheries for comment. Information provided would be relevant to tuna and billfish fisheries in the area that may affect vessel navigation, fishing activities, and/or the conservation of fish resources based on the planned aspects of the activity, and proposed control measures to manage impacts.

- Tuna Australia noted that it wishes to engage constructively with project proponents for all situations where there is potential for conflict with vessel navigation, access to fishing area and/or gear, and the biology of target fish and baitfish. Advice provided can change annually due to the dynamic nature of our fisheries.
- Tuna Australia encouraged companies requiring advice from its sector to enter into a consultation services agreement with Tuna Australia to support their applications. Noting that Tuna Australia may be able to provide information on vessel navigation, fishing activities and/or the conservation of fish resources that may be affected that is not publicly available and will be an important input to environmental impact and risk assessment processes.

The summary above demonstrates that consultation for the purpose of 11A(1) is complete however, as per Woodside's commitment to ongoing consultation, engagement has continued as summarised below:

Ongoing consultation:

- 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.
 - 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 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:

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- 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 TA'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. Tuna Australia:
 - Noted outcomes of the recent case law focussed on stakeholder engagement and ensuring energy companies meet regulatory requirements and NOPSEMA guidelines.
 - Requested Woodside send the recent case law.
 - Reached out to energy companies who have executed a services agreement with TA and asked whether TA could inform Woodside about their working relationship. Beach Energy confirmed it was happy for TA to share its details.
 - Advised how it contacts concession holders and what it provides to them.
 - Provided a TA contact who manages engagement with energy companies to progress a service agreement with TA.
- On 17 July 2023, Woodside emailed Tuna Australia and confirmed:
 - Woodside's legal team had reviewed the Tuna Australia document and requested some minor changes to be made.
 - Woodside asked Tuna Australia if a marked up version of the Service Agreement would be the simplest way for Tuna Australia to review.
 - Woodside attached a Supplier Questionnaire as part of its due diligence process and asked Tuna Australia to complete the form.
- On 18 July 2023, Tuna Australia emailed Woodside and confirmed:
 - Woodside should send a marked up version of the Service Agreement for TA to review.
 - TA 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 TA to review.

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- On 19 July 2023, Tuna Australia emailed Woodside and thanked it for sending through edits to TA's services agreement and commented:
 - TA does not want any changes made to Schedule 2 of their Service Agreement and if Woodside has requirements outside of what TA provides, then this will need to be discussed, agreed, and costed accordingly.
 - TA would like further details on the Annual service for the Woodside Master Existing document including the rationale for the payment proposed.
 - TA does not agree to a fixed price for the above bodies of work. TA 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, TA need to remain flexible to clients needs and discuss additional works should they be required. TA 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.
 - TA 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 3 August 2023, Tuna Australia responded in regards to 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.

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- it has offered to assist energy companies to genuinely and comprehensively meet consultation and reporting requirements and 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.
 - 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 this 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.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>Tuna Australia noted:</p> <ul style="list-style-type: none"> • several members were pursuing joint venture fishing arrangements to work these fishing grounds. • importance of the Leeuwin current as an important fauna distribution feature, including the target species of the WTBF. • it is not evident that the impacts have been considered or mitigated to an extent that would not impact tuna quality. More specific mitigation detail required. • requested information on how contracted vessels in these areas can deconflict themselves from drifting longline gear should it enter the Operational Area. • risk assessments are silent on potential impacts on the electrical and acoustic interferences that may be generated by machinery or vessels used in these activities • sought reassurance activities would be done in the most expeditious timeframe and with utmost regard to the marine environment <p>Tuna Australia provided Woodside their position statement for engaging with energy companies seeking consultation advice from stakeholders on environmental plans and project proposals.</p> <p>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 has:</p> <ul style="list-style-type: none"> • provided additional information on expected marine discharges and seabed disturbances, as well as expected impacts resulting from items proposed to be left <i>in situ</i>. • provided additional information on the administration of and access to the safety exclusion zones and precautionary areas, as well as opportunities to establish on-water communications protocols to ensure the safety of all marine users. • advised that acoustic impacts will be limited to MODU and vessel noise and noises associated with activities at the seabed. • 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 including advising that EP controls are in place to limit to the duration of activities and minimise the temporary exclusion zone. <p>Woodside has addressed Tuna Australia's feedback, including advising that EP controls are in place to limit to the duration of activities, and minimise the temporary exclusion zone.</p> <p>Woodside noted that:</p> <ul style="list-style-type: none"> • routine marine discharges would be managed according to legislative and regulatory requirements. • discharges are expected to rapidly disperse soon after release given the offshore location and water depth. • seabed disturbance associated with the activity will be temporary and localised to the activity areas • there are no other acoustic sources that will be used for the activity other than MODU, project vessels and temporary subsea equipment used for plugging and abandoning the wells. <p>The fishery management area for the Western Tuna and Billfish Fishery, which Tuna Australia represents, overlaps both the Operational Area and EMBA. However, there is considered to be no potential for interaction within these areas as:</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>Woodside has consulted Tuna Australia in the course of preparing this EP. Woodside has assessed the claims or objections raised by Tuna Australia. 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 Tuna Australia's functions, interests or activities.</p>
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<p>Tuna Australia advised the name of another energy company where a service agreement had been executed.</p> <p>Tuna Australia committed to provide more information on how it would manage consultation distribution and a report under its service agreement.</p> <p>Whilst feedback has been received, there were no objections or claims.</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 occurred within the EMBA in the last five years (2016–2021) (Patterson et al., 2022). • Woodside acknowledges previous feedback received from Tuna Australia with respect to separate EPs. Woodside confirms that it conducts impact and risk assessments for its activities in order to identify and manage environmental impacts and risks, which includes potential interaction with recreational and commercial fishers. • To manage potential interactions, Woodside has the following controls in place with regard to the Petroleum Activities Program (PAP) of this EP: <ul style="list-style-type: none"> • MODU and Vessels adhere to regulatory requirements for navigational safety. • Notification to AHO of activities and movements to allow generation of navigation warnings (Maritime Safety Information Notifications (MSIN) and Notice to Mariners (NTM) (including AUSCOAST warnings where relevant)). • Establishment of temporary exclusion zones by relevant vessels which are communicated to marine users. • Vessels comply with regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements. • Woodside also notes the following in relation to the points raised in Tuna Australia’s feedback: <ul style="list-style-type: none"> ○ Routine marine vessel and MODU discharges will be managed in accordance with legislative and regulatory requirements (e.g. marine orders) ○ Any localised impacts to water quality, sediment quality and marine fish are likely to be intermittent and highlight localised and not expected to impact any commercial fisheries in the area. ○ Seabed disturbance will managed by limiting the area of seabed disturbance to only that required to undertake the activity, and avoiding unnecessary seabed disturbance 	
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	<ul style="list-style-type: none"> ○ Acoustic emissions from vessels in field will be managed by complying with regulatory requirements (e.g. EPBC Regulations 2000 – Part 8 Division 8.1). <p>Woodside has provided consultation information to AFMA, 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 11.8).</p>	
State Commercial fisheries and representative bodies		
Marine Aquarium Fish Managed Fishery		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Marine Aquarium Managed Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Marine Aquarium Managed Fishery on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Marine Aquarium Managed Fishery with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to Marine Aquarium Fish Managed Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a website link to Consultation Information. • On 8 March 2023, Woodside sent a reminder letter to Marine Aquarium Fish Managed Fishery advising of the proposed activity (Appendix F, reference 2.10) and provided a website link to Consultation Information. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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<p>No feedback, objections or claims received despite follow up.</p>	<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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Mackerel Managed Fishery (Areas 2 and 3)</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Mackerel Managed Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Mackerel Managed Fishery (Area 2 and 3) on 11 March 2022 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Mackerel Managed Fishery (Area 2 and 3) with the opportunity to provide feedback over a 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside sent a letter to licence holders advising of the proposed activity (Appendix F, reference 1.31) and provided a Consultation Information Sheet.
- On 7 April 2022, Woodside sent a reminder letter to licence holders advising of the proposed activity (Appendix F, reference 1.31.1) and provided a Consultation Information Sheet.
- On 17 February 2023, Woodside sent a letter to licence holders advising of the proposed activity (Appendix F, reference 2.33) and provided a website link to Consultation Information.
- On 8 March 2023, Woodside sent a reminder letter to licence holders advising of the Appendix F, reference 2.10) and provided a website link to Consultation Information.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>No feedback, objections or claims received despite follow up.</p>	<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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>West Coast Deep Sea Crustacean Managed Fishery</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with West Coast Deep Sea Crustacean Managed Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to West Coast Deep Sea Crustacean Managed Fishery on 11 March 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 West Coast Deep Sea Crustacean Managed Fishery with the opportunity to provide feedback over a 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside sent a letter to licence holders advising of the proposed activity (Appendix F, reference 1.31) and provided a Consultation Information Sheet.
- On 7 April 2022, Woodside sent a reminder letter to licence holders advising of the proposed activity (Appendix F, reference 1.31.1) and provided a Consultation Information Sheet.
- On 17 February 2023, Woodside sent a letter to West Coast Deep Sea Crustacean Managed Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a website link to Consultation Information.
- On 8 March 2023, Woodside sent a reminder letter to West Coast Deep Sea Crustacean Managed Fishery advising of the proposed activity (Appendix F, reference 2.10) and provided a website link to Consultation Information.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>No feedback, objections or claims received despite follow up.</p>	<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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Specimen Shell Managed Fishery</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Specimen Shell Managed Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Specimen Shell Managed Fishery on 9 June 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Specimen Shell Managed Fishery with the opportunity to provide feedback over a 6 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 9 June 2023, Woodside emailed Specimen Shell Managed Fishery advising of the proposed activity (Appendix F, reference 2.56) and provided a Consultation Information Sheet. • On 26 June 2023, Woodside sent a reminder email to Specimen Shell Managed Fishery advising of the proposed activity (Appendix F, reference 2.56.1) 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
<p>No feedback, objections or claims received despite follow up.</p>	<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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Onslow Prawn Managed Fishery</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Onslow Prawn Managed Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Prawn Managed Fishery on 16 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Onslow Prawn Managed Fishery with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p>		

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- On 17 February 2023, Woodside sent a letter to Onslow Prawn Managed Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a Consultation Information Sheet.
- On 8 March 2023, Woodside sent a reminder letter to Onslow Prawn Managed Fishery advising of the proposed activity (Appendix F, reference 2.10).

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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>

Exmouth Gulf Prawn Fishery

- Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:
- Consultation Information Sheet was publicly available on the BHP website in March 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 Exmouth Gulf Managed Fishery on 17 February 2023 based on their function, interest and activities.
 - Woodside has sent a follow up email seeking feedback on the proposed activities.

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<ul style="list-style-type: none"> Woodside has provided Exmouth Gulf Managed Fishery with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 17 February 2023, Woodside sent a letter to Exmouth Gulf Prawn Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a website link to Consultation Information. On 8 March 2023, Woodside sent a reminder letter to Exmouth Gulf Prawn Fishery advising of the proposed activity (Appendix F, reference 2.10) and provided a website link to Consultation Information. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>

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Gascoyne Demersal Scalefish Fishery		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Gascoyne Demersal Scalefish Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Gascoyne Demersal Scalefish Fishery on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Gascoyne Demersal Scalefish Fishery with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to Gascoyne Demersal Scalefish Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a Consultation Information Sheet. • On 8 March 2023, Woodside sent a reminder letter to Gascoyne Demersal Scalefish Fishery advising of the proposed activity (Appendix F, reference 2.10). 		
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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p>

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		No additional measures or controls are required.
West Coast Demersal Scalefish Fishery		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with West Coast Demersal Scalefish Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 West Coast Demersal Scalefish Fishery on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided West Coast Demersal Scalefish Fishery with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to West Coast Demersal Scalefish Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a Consultation Information Sheet. • On 8 March 2023, Woodside sent a reminder letter to West Coast Demersal Scalefish Fishery advising of the proposed activity (Appendix F, reference 2.10). 		
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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to</p>

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		the commencement and at the end of the activity, as referenced as PS 1.4 in this EP. No additional measures or controls are required.
West Coast Rock Lobster Fishery		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with West Coast Rock Lobster Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 West Coast Rock Lobster Fishery on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided West Coast Rock Lobster Fishery with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to West Coast Rock Lobster Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a Consultation Information Sheet. • On 8 March 2023, Woodside sent a reminder letter to West Coast Rock Lobster Fishery advising of the proposed activity (Appendix F, reference 2.10). 		
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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area</p>

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		<p>(Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Pilbara Trawl Fishery</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Pilbara Trap Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Pilbara Trawl Fishery on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Pilbara Trawl Fishery with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to Pilbara Trawl Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a Consultation Information Sheet. • On 8 March 2023, Woodside sent a reminder letter to Pilbara Trawl Fishery advising of the proposed activity (Appendix F, reference 2.10). 		
<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 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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area</p>

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		<p>(Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Pilbara Trap Fishery</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Pilbara Line Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Pilbara Trap Fishery on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Pilbara Trap Fishery with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to Pilbara Trap Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a Consultation Information Sheet. • On 8 March 2023, Woodside sent a reminder letter to Pilbara Trap Fishery advising of the proposed activity (Appendix F, reference 2.10). 		
<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 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 11.8)</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area</p>

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		<p>(Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Pilbara Line Fishery</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Pilbara Line Fishery for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Pilbara Line Fishery on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Pilbara Line Fishery with the opportunity to provide feedback over a 10month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to Pilbara Line Fishery advising of the proposed activity (Appendix F, reference 2.33) and provided a Consultation Information Sheet. • On 8 March 2023, Woodside sent a reminder letter to Pilbara Line Fishery advising of the proposed activity (Appendix F, reference 2.10). 		
<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 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 11.8)</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area</p>

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		<p>(Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
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Western Australian Fishing Industry Council (WAFIC)

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with WAFIC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to WAFIC on 29 October 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 addressed and responded to WAFIC over a 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed WAFIC advising of the proposed activity (Appendix F, Reference 1.8).
- On 7 April 2022, Woodside sent a reminder email to WAFIC seeking feedback (Appendix F, Reference 1.26).
- On 8 April 2022, WAFIC responded and requested the following information, following receipt of which WAFIC would provide a formal response:
 - WAFIC supports the approach to remove the equipment listed in Table 2 from the Stakeholder Information Fact Sheet, particularly as the area overlaps with the Western Deepwater Trawl Fishery.
 - WAFIC will make comment regarding the proposed infrastructure to remain in-situ when additional information is provided during the next consultation phase.
 - WAFIC has concerns regarding the flowline that was blocked and that has the potential to release up to 14 m³ of hydrocarbons during recovery of the flowline. Can Woodside please provide some additional clarification/information around this, including the impacts to commercial fishing, aquatic resource and environment, product expected to be released etc., as further in the fact sheet on potential risk and management and/or mitigation measure this issue is not covered.
- On 11 April 2022, Woodside responded and provided the following response:
 - noted WAFIC's feedback on Woodside's proposal to remove equipment as part of activities to be managed under the Stybarrow Equipment Removal EP
 - Woodside will provide additional information in due course for future planned decommissioning activities
 - Woodside advised WAFIC that it decided to remove the H4 flowline from the current EP submission
- On 12 April 2022, WAFIC responded and thanked Woodside for the prompt response and welcomed ongoing engagement regarding the project.
- On 27 May 2022, Woodside emailed WAFIC advising of the proposed activity (H4 flowline removal) (Appendix F, reference 1.32.7).
- On 4 July 2022, WAFIC responded to Woodside advising its support and the removal of the H4 flexible production flowline. WAFIC sought responses to the following questions and requests, unrelated to this EP:
 - What material is contained in the suction gravity bases for the riser holdbacks and water injection manifold?
 - Provide further detail of the assessment.

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- On 28 July 2022, Woodside responded to WAFIC and acknowledged WAFIC's feedback on the removal of the H4 flexible production flowline.
 - acknowledged WAFIC's feedback the removal of the H4 flexible production flowline.
 - provided details on the composition of the suction gravity bases.
 - confirmed that recent 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.
- On 16 February 2023, Woodside emailed WAFIC advising of the proposed activity (Appendix F, reference 2.14) 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 2.14.1) 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 activities proposed under this EP and to request any feedback.
- On 24 May 2023, WAFIC emailed Woodside to ask whether Woodside was planning to develop and implement a compensation framework Fishers' engagement. WAFIC also suggested a different consulting approach with WAFIC and commercial fishers may need to be adopted as WAFIC had limited resources and other oil and gas proponents utilising WAFIC's fee-for-service model for EPs would be prioritised.
- 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, in line with its consultation approach for unplanned events. 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 to confirm if there was any further feedback with respect to the activities proposed under this EP.

Ongoing consultation

The summary above demonstrates that consultation for the purpose of 11A(1) is complete. However, as per Woodside's commitment to ongoing consultation, engagement has continued as summarised below:

- 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:
 - 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;

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- 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.

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>WAFIC advised its support for the approach to remove the equipment listed in the Info Fact sheet, particularly as the area overlaps with the Western Deepwater Trawl Fishery. WAFIC requested further information on the H4 flowline that was blocked.</p> <p>WAFIC advised its support for the removal of the H4 flexible production flowline.</p> <p>WAFIC has provided general feedback about consultation and has identified decommissioning as one of the activities of the most interest to the commercial fishing sector.</p> <p>WAFIC and Woodside are working towards a more strategic approach and tailored model to consult the commercial fishery sector.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside has responded to WAFIC, including:</p> <ul style="list-style-type: none"> acknowledging feedback on Woodside’s proposal to remove equipment as part of activities to be managed under this EP. noting Woodside will provide additional information in due course for future planned decommissioning activities. <p>Woodside has further responded to WAFIC’s feedback, including acknowledging its feedback on the removal of the H4 flexible production flowline.</p> <p>Woodside agreed to identify a more strategic and tailored model to consult the commercial fishery sector on environment plans.</p> <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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on WAFIC’s functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
<p>Western Rock Lobster Council</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Western Rock Lobster Council for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Western Rock Lobster Council on 16 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to Western Rock Lobster Council over a 10 month period.

Summary of information provided and record of consultation:

- On 10 February 2023, WAFIC emailed the Western Rock Lobster Council (and copied in Woodside) to introduce Woodside's consultation team to the Council and included a link to NOPSEMA's consultation guidelines.
- On 16 February 2023, Woodside responded to WAFIC's email and the Western Rock Lobster Council and welcomed an opportunity to discuss Woodside's planned activities (for this and other EPs) with the Council and its members. Woodside asked for guidance on whether to send consultation for members to the Council or to the members directly. Woodside's email included links to information on proposed activities and Consultation Information Sheets.
- On 27 February 2023, the Western Rock Lobster Council responded to Woodside requesting a map that included all the relevant projects Woodside was undertaking so it had a reference point for size/locations. The Council also asked for consultation time frames in relation to each individual project. The Council advised it would communicate all relevant information to its members.
- On 1 March 2023, Woodside provided a copy of the Consultation Information Sheet for the proposed activities including activities for this EP, feedback dates and maps. Woodside confirmed it had provided this information to Western Rock Lobster Fishery licence holders directly via post but welcomed the Council's offer to provide consultation information to members directly as well.
- On 14 March 2023, Woodside sent a follow up email to the Western Rock Lobster Council.
- On 20 March 2023, Western Rock Lobster responded, thanking Woodside for its email and requested an extension of 2 weeks on the feedback dates.
- On 30 March 2023, Woodside responded confirming the requested extension to provide feedback.
- On 12 April 2023, Woodside emailed the Western Rock Lobster Council to follow up on feedback relating to the proposed activity.
- On 10 May 2023, Woodside had a phone call with the Western Rock Lobster Council to follow up on feedback relating to a number of EPs, including the activities proposed under this EP. Woodside referred to its email dated 12 April 2023 which referenced the EPs Woodside had provided consultation information to the Western Rock Lobster Council for. The Western Rock Lobster Council advised it would come back to Woodside the same day if it had any feedback.
- On 11 May 2023, Western Rock Lobster Council emailed Woodside to advise it didn't have any comments on the EPs, including the activities proposed under this EP.

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- On 11 May 2023, Woodside responded to thank the Western Rock Lobster Council for its response and confirmed Woodside will continue to engage the Western Rock Lobster Council with respect to 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>Western Rock Lobster Council requested a map and timeframes for Woodside activities including the activities for this EP.</p> <p>Western Rock Lobster Council confirmed it didn’t have any comments on the proposed activities.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside has provided consultation information including maps and time frames to DPIRD, WAFIC, the Western Rock Lobster Council 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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on Western Rock Lobster Council’s functions, interests or activities.</p> <p>No additional measures or controls are required.</p>

Recreational marine users and representative bodies

Exmouth Recreational Marine Users

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Exmouth Recreational Marine Users for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 11 March 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 20 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed Exmouth Recreational Marine Users advising of the proposed activity (Appendix F, Reference 1.10 and Reference 1.10.1).
- On 27 May 2022, Woodside emailed Exmouth Recreational Marine Users advising of the proposed activity (Appendix F, Reference 1.32.8)
- On 31 May 2022, an Exmouth Recreational Marine User responded requesting that the proposed activity did not commence until after GAMEX tournament was conducted in March each year.
- On 28 July 2022, Woodside responded advising that there were no plans to be in the field in March 2023. Woodside committed to maintaining contact as planning progressed for mutual activities.
- On 17 February 2023, Woodside emailed Exmouth Recreational Marine Users 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 Exmouth Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.9.1) 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
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<p>No feedback was received from Exmouth Recreational Marine Users, with the exception of one licence holder that requested the proposed activity did not commence until after GAMEX tournament was conducted.</p>	<p>Woodside notes that no feedback has been received from Exmouth Recreational Marine Users, with the exception of once licence holder. Woodside addressed their feedback by confirming there were no plans to be in the field in March 2023.</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 11.8).</p> <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 considers the measures and controls described within this EP address the potential impact from the proposed activities on Exmouth Recreational Marine Users' functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
<p>Gascoyne Recreational Marine Users (formerly Onslow and Exmouth-based fishing clubs and charter boat / marine tourism operators)</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Gascoyne Recreational Marine Users for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Gascoyne Recreational Marine Users (Onslow and Exmouth-based fishing clubs and charter boat / marine tourism operators) on 17 February 2023, based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has addressed and responded to Gascoyne Recreational Marine Users over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to Gascoyne Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.34, reference 2.34.1, reference 2.34.2 and reference 2.34.3) and provided a Consultation Information Sheet. • On 8 March 2023, Woodside sent a letter to Gascoyne Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.34.5 and reference 2.34.5.1) 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>

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<p>No feedback, objections or claims received despite follow up.</p>	<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. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>No additional measures or controls are required.</p>
<p>Pilbara / Kimberley Recreational Marine Users</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Pilbara/Kimberley Recreational Marine Users for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to Pilbara/Kimberley Recreational Marine Users on 17 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 Pilbara/Kimberley Recreational Marine Users over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside sent a letter to Pilbara / Kimberley Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.34 and reference 2.34.4) and provided a Consultation Information Sheet. • On 8 March 2023, Woodside sent a letter to Pilbara / Kimberley Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.34.5 and reference 2.34.5.2) 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 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. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>No additional measures or controls are required.</p>
<p>Karratha Recreational Marine Users (formerly Dampier-based fishing clubs and charter boat / marine tourism operators)</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Karratha Recreational Marine Users for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Karratha Recreational Marine Users (formerly Dampier-based fishing clubs and charter boat / marine tourism operators) on 17 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to Karratha Recreational Marine Users over a 10 month period.

Summary of information provided and record of consultation:

- On 17 February 2023, Woodside sent a letter to Karratha Recreational Marine Users 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 Karratha Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.9.1) and provided a Consultation Information Sheet.
- On 15 March 2023, Woodside sent a reminder email to King Bay Game Fishing Club advising of the proposed activity (Appendix F, reference 2.9.2) 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 has provided consultation information to Recfishwest, Marine Tourism Association of 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 11.8).	No additional measures or controls are required.

West Coast Recreational Marine Users

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with West Coast Recreational Marine Users for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

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- Consultation Information Sheet was publicly available on the BHP website in March 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 West Coast Recreational Marine Users on 9 June 2023 based on their function, interest and activities.
- Woodside has addressed and responded to West Coast Recreational Marine Users over a 6 month period.

Summary of information provided and record of consultation:

- On 9 June 2023, Woodside sent a letter to West Coast Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.56) and provided a Consultation Information Sheet.
- On 23 June 2023, Woodside sent a reminder email to West Coast Recreational Marine Users advising of the proposed activity (Appendix F, reference 2.56.1) and provided a Consultation Information Sheet.
- On 31 July 2023, a West Coast recreational marine user, Ultimate Outback Experiences, contacted Woodside’s 1800 number to query why it was receiving letters from Woodside.
- On 31 July 2023, Woodside responded to the recreational marine user by email to ask if it could please provide further detail about the information received from Woodside to assist further with a response.
- On 7 August 2023, the recreational marine user attached in an email photos of the letters received which related to this proposed activity, as well as other Griffin and Stybarrow Environment Plans.
- On 16 August 2023, Woodside responded to the recreational marine user and providing more detail about the process of consultation and the relevance to Ultimate Outback Experiences, as a West Coast recreational marine user. Woodside offered to meet to discuss further if required.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>A recreational marine user requested more information on why it was receiving consultation letters.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<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. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>No additional measures or controls are required.</p>
<p>Recfishwest</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Recfishwest for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:"

- Consultation Information Sheet was publicly available on the BHP website in March 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 20 month period.

Summary of information provided and record of consultation:

- On 8 April 2022, Recfishwest responded to Woodside correspondence and provided the following feedback:
 - Recfishwest provided an overview of its activities on behalf of recreational fishers, noting its economic importance to the state and the social wellbeing of regional communities.
 - The recreational fishing community currently fishes the Stybarrow area and structures.
 - There are 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.
 - Recfishwest outlined its five key principles for supporting reefing opportunities.
 - Recfishwest did not object with the steps being taken by Woodside to address concerns that the recreational fishing sector might have with respect to environmental safety and benefits.
 - Recfishwest would object to any infrastructure proposed to be left in the water where contaminants cannot be removed.
 - Recfishwest had a preference for structure augmentation.
 - Recfishwest requested that all charts are updated, so recreational fishers can locate the structure.
 - Recfishwest requested updates on the progress on these decommissioning activities given proposed activities impact WAFIC's constituents.
- On 11 April 2022, Woodside responded and provided the following response:
 - Woodside noted the provision of information about Recfishwest and its representative activities in the recreational fishing sector, as well as its comments on the economic and social importance to the State and regional communities.
 - Woodside acknowledged Recfishwest feedback that the recreational fishing community currently fished the Stybarrow area and structures. Woodside requested that recreational fishers observe 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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- Woodside noted 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.
- Woodside noted Recfishwest's position on its support for reefing opportunities, including its five key principles.
- Woodside noted that Recfishwest did not object to the steps being taken by Woodside to address concerns that the recreational fishing sector might have with respect to environmental safety and benefits.
- Woodside acknowledged that Recfishwest would object to any infrastructure proposed to be left in the water where contaminants cannot be removed. Woodside confirmed that the scope of this EP does not consider permanently leaving any infrastructure in situ.
- Woodside noted Recfishwest's preference for structure augmentation. Woodside advised it approached decommissioning on a case-by-case basis and would consider this position as part of planning for future decommissioning activities where structures may be proposed to be left in situ.
- The Stybarrow infrastructure is marked on nautical charts
- Woodside committed to ongoing engagement with Recfishwest on future planned decommissioning activities.
- On 11 April 2022, Woodside emailed again to advise it had omitted to mention in previous consultation that the Stybarrow infrastructure was marked on nautical charts.
- On 27 May 2022, Woodside emailed Recfishwest advising of the proposed activity (Appendix F, reference 1.32.13)
- 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:
 - Acknowledged the previous correspondence which advises recreational fishers to observe a 500 m safety exclusion zone around the wells and a 1,500 m radius around the Operational Area for the duration of the activity.
 - 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 EPs for stakeholder consultation, Recfishwest do not object to the steps taken to address concerns that the recreational fishing sector might have.

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- 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.
- 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 from Recfishwest on exclusion zones.
 - 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 Griffin and Stybarrow fields.
 - Recfishwest referred to advice previously provided on the importance of recreational fishing to the Gascoyne region and that areas around both fields are actively fished by the recreational fishing community
 - Recfishwest noted that the proposed activities timing and that existing and new exclusion/cautionary zones will be in place during this period.
 - 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 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.

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"> • Acknowledged exclusion zones to be observed for the duration of the activity. • Advised it had no objection to the steps taken to address concerns that the recreational fishing sector might have. • Requested to be consulted on any upcoming offshore exploration activities, irrespective of the distance from shore 	<p>Woodside has addressed Recfishwest’s feedback, including:</p> <ul style="list-style-type: none"> • acknowledged the social importance to regional communities of recreational fishing. • acknowledged the potential presence of recreational fishers at the activity location. • noted feedback from Recfishwest on exclusion zones. • 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. 	<p>Woodside will provide notifications to Recfishwest prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on Recfishwest’s functions, interests or activities.</p>

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<p>and that all charts are updated, so recreational fishers can locate the areas.</p> <ul style="list-style-type: none"> Noted the importance of recreational fishing to the Gascoyne region Advised it had no concerns regarding the proposed activities. Requested to be kept informed as activities progress so that it may advise recreational fishers as required. 	<ul style="list-style-type: none"> Confirmed Woodside will provide notifications to Recfishwest prior to the commencement and at the end of the activity. <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 11.8).</p>	
<p>Marine Tourism Association of WA</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Marine Tourism Association of WA for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet was publicly available on the BHP website in March 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 11 March 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 20 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 11 March 2022, Woodside emailed Marine Tourism WA advising of the proposed activity (Appendix F, Reference 1.12). On 27 May 2022, Woodside emailed Marine Tourism WA advising of the proposed activity (Appendix F, Reference 1.32.14) 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 2.2.1) 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 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. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	No additional measures or controls are required.
WA Game Fishing Association		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with WA Game Fishing Association (WAGFA) for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:"</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 WA Game Fishing Association on 11 March 2023 based on their function, interest and activities. • 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 an 20 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 11 March 2022, Woodside emailed WAGFA advising of the proposed activity (Appendix F, reference 1.9). • On 27 May 2022, Woodside emailed WAGFA advising of the proposed activity (Appendix F, reference 1.32.22). • On 16 February 2023, Woodside emailed WAGFA 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 WAGFA advising of the proposed activity (Appendix F, reference 2.2.1) 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
No feedback, objections or claims received despite follow up.	<p>Woodside has provided consultation information to Recfishwest, Marine Tourism Association of WA, WA Game Fishing Association and individual recreational marine users.</p>	No additional measures or controls are required.

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	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).	
Titleholders and Operators		
Chevron Australia/ Osaka Gas Gorgon/ Tokyo Gas Gorgon/ JERA Gorgon		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Chevron and its industry partners for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:"</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Chevron on 17 February 2023 based on their function, interest and activities. • Woodside has addressed and responded to Chevron over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside emailed Chevron 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 Chevron advising of the proposed activity (Appendix F, reference 2.4.1) and provided a Consultation Information Sheet. • On 22 March 2023, Chevron responded, thanking Woodside for the consultation information, advising that they are actively reviewing the information (expected completion by mid-April), and requesting GIS shape files for the EP. • On 3 April 2023, Woodside responded, thanking Chevron for the feedback and provided the GIS shape files for the EP as requested. • On 26 April 2023, Woodside emailed Chevron Australia following up on feedback with respect to the proposed activity. • On 1 June 2023, Woodside emailed Chevron Australia following up on feedback with respect to the proposed activity. • On 16 June 2023, Chevron responded advising there was no impact identified for activities proposed under this EP. Chevron requested that if the work plan is executed during the cyclone season, that Woodside provides cyclone anchor configuration, as well as mooring design, site specific geophysical and geotechnical data, anchor analysis, risk mitigations to inform Chevron Australia of the potential risks to our assets within the affected leases. • On 30 June 2023, Woodside responded thanking Chevron for its feedback that there was no impact identified for proposed activities under this EP and confirming there was no planned mooring. 		
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>Chevron requested GIS shape files for the proposed activities and advised there was no impact identified for activities proposed under this EP.</p> <p>Chevron also requested that, if the work plan is executed in the cyclone season, then Woodside to provide cyclone anchor configuration, mooring design, site specific geophysical and geotechnical data and risk mitigations.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside has addressed Chevron's feedback by providing requested GIS shape files and noting its feedback that there was no impact identified for activities proposed under this EP.</p> <p>Woodside confirmed there was no proposed mooring for this EP and no activity during the cyclone season.</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 11.8).</p>	<p>Woodside has consulted Chevron in the course of preparing this EP. Woodside has assessed the claims or objections raised by Chevron. 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 Chevron's functions, interests or activities.</p>
<p>Western Gas</p>		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Western Gas for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Western Gas on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Western Gas with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside emailed Western Gas 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 Western Gas advising of the proposed activity (Appendix F, reference 2.4.1) 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>

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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 11.8).	No additional measures or controls are required.
Exxon Mobil Australia Resources Company		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Exxon Mobil Australia for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Exxon Mobil Australia Resources Company on 17 February 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Exxon Mobil Australia Resources Company with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 17 February 2023, Woodside emailed ExxonMobil 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 ExxonMobil advising of the proposed activity (Appendix F, reference 2.4.1) 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
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 11.8).	No additional measures or controls are required.
Shell Australia		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Shell for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Shell Australia on 1 June 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shell Australia with the opportunity to provide feedback over a 6 month period.

Summary of information provided and record of consultation:

- On 1 June 2023, Woodside emailed Shell Australia advising of the proposed activity (Appendix F, reference 2.55) and provided a Consultation Information Sheet.
- On 23 June 2023, Woodside sent a reminder email to Shell Australia advising of the proposed activity (Appendix F, reference 2.55.1) 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
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 11.8).	No additional measures or controls are required.

BP Developments Australia

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with **BP** for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 BP Developments Australia on 17 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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<ul style="list-style-type: none"> Woodside has provided BP Developments Australia with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 17 February 2023, Woodside emailed BP Developments Australia 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 BP Developments Australia advising of the proposed activity (Appendix F, reference 2.4.1) 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
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 11.8).	No additional measures or controls are required.
Carnarvon Energy		
<ul style="list-style-type: none"> Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Carnarvon Energy for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically: Consultation Information Sheet was publicly available on the BHP website in March 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 Carnarvon Energy on 17 February 2023 based on their function, interest and activities. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Carnarvon Energy with the opportunity to provide feedback over a 10 month period. Summary of information provided and record of consultation: On 17 February 2023, Woodside emailed Carnarvon Energy 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 Carnarvon Energy advising of the proposed activity (Appendix F, reference 2.4.1) 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.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).	No additional measures or controls are required.

PE Wheatstone

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with PE Wheatstone for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 PE Wheatstone on 1 June 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided PE Wheatstone with the opportunity to provide feedback over a 6 month period.

Summary of information provided and record of consultation:

- On 1 June 2023, Woodside emailed PE Wheatstone advising of the proposed activity (Appendix F, reference 2.55) and provided a Consultation Information Sheet.
- On 1 June 2023, PE Wheatstone responded to Woodside advising it acknowledged the change to the activity scope and it had no concerns regarding the proposed activity.
- On 8 June 2023, Woodside responded to PE Wheatstone acknowledging receipt of feedback that there are no concerns with this activity.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
PE Wheatstone responded to Woodside advising it acknowledged the change to the activity scope and it had no concerns regarding the proposed activity.	Woodside noted PE Wheatstone's acknowledgement of receipt of information and confirmation that there were no concerns with the activity. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).	No additional measures or controls are required.

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Kyushu Electric Wheatstone		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Kyushu Electric Wheatstone for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Kyushu Electric Wheatstone on 9 June 2023 based on their function, interest and activities. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Kyushu Electric Wheatstone with the opportunity to provide feedback over a 6 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 1 June 2023, Woodside emailed Kyushu Electric Wheatstone advising of the proposed activity (Appendix F, reference 2.55) and provided a Consultation Information Sheet. • On 23 June 2023, Woodside sent a reminder email to Kyushu Electric Wheatstone advising of the proposed activity (Appendix F, reference 2.55.1) 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
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 11.8).	No additional measures or controls are required.

Eni Australia		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with ENI Australia for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 Eni Australia on 17 February 2023 based on their function, interest and activities. 		

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<ul style="list-style-type: none"> Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Eni Australia with the opportunity to provide feedback over a 6 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 17 February 2023, Woodside emailed Eni Australia 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 Eni Australia advising of the proposed activity (Appendix F, reference 2.4.1) 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
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 11.8).	No additional measures or controls are required.
Fugro Exploration		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Fugro for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet was publicly available on the BHP website in March 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 Fugro Exploration on 1 June 2023 based on their function, interest and activities. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Fugro Exploration with the opportunity to provide feedback over a 6 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 1 June 2023, Woodside emailed Fugro Exploration advising of the proposed activity (Appendix F, reference 2.55) and provided a Consultation Information Sheet. On 23 June 2023, Woodside sent a reminder email to Fugro Exploration advising of the proposed activity (Appendix F, reference 2.55.1) 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

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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 11.8).	No additional measures or controls are required.
Finder Energy		
<ul style="list-style-type: none"> Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Finder Energy for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically: Consultation Information Sheet was publicly available on the BHP website in March 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 Finder Energy on 17 February 2023 based on their function, interest and activities. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Finder Energy with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 17 February 2023, Woodside emailed Finder Energy 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 Finder Energy advising of the proposed activity (Appendix F, reference 2.4.1) 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
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 11.8).	No additional measures or controls are required.
JX Nippon		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with JX Nippon for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 JX Nippon on 17 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided JX Nippon with the opportunity to provide feedback over a 10 month period.

Summary of information provided and record of consultation:

- On 17 February 2023, Woodside emailed JX Nippon advising of the proposed activity (Appendix F, reference 2.4) and provided a Consultation Information Sheet.
- On 23 February 2023, Woodside emailed JX Nippon to an additional representative advising of the proposed activity and provided a Consultation Information Sheet.
- On 24 February 2023, Woodside had an email exchange with JX Nippon regarding additional company contacts and forwarded the Woodside correspondence of 17 February 2023.
- On 28 February 2023, Woodside emailed JX Nippon Oil & Gas Exploration Corporation to thank it for passing on the consultation information to the correct contact and advised it has updated its stakeholder distribution list.
- On 10 March 2023, Woodside emailed JX Nippon following up of the proposed activity (Appendix F, reference 2.4.1) provided a Consultation Information Sheet and to request any feedback.

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 notes JX Nippon acknowledged receipt of the consultation information. 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 11.8).	No additional measures or controls are required.

KUFPEC

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with KUFPEC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 KUFPEC on 17 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has consulted with KUFPEC over a 10 month period.

Summary of information provided and record of consultation:

- On 17 February 2023, Woodside emailed KUFPEC 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 KUFPEC advising of the proposed activity (Appendix F, reference 2.4.1) 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
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 11.8).	No additional measures or controls are required.

Santos NA Energy Holdings / Santos Ltd / Santos WA Northwest / Santos Offshore / Santos WA Southwest / Santos (BOL) / Santos WA PVG

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Santos for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Santos on 17 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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<ul style="list-style-type: none"> Woodside has provided Santos with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 17 February 2023, Woodside emailed Santos 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 Santos advising of the proposed activity (Appendix F, reference 2.4.1) 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
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 11.8).	No additional measures or controls are required.
OMV Australia / Sapura OMV Upstream		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with OMV for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet was publicly available on the BHP website in March 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 OMV on 17 February 2023 based on their function, interest and activities. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided OMV with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 17 February 2023, Woodside emailed Sapura OMV 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 Sapura OMV advising of the proposed activity (Appendix F, reference 2.4.1) 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
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 11.8).	No additional measures or controls are required.

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KATO Corowa / KATO Energy (WA) Pty Ltd

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with KATO for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 KATO on 1 June 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided KATO with the opportunity to provide feedback over a 6 month period.

Summary of information provided and record of consultation:

- On 1 June 2023, Woodside emailed Kato advising of the proposed activity (Appendix F, reference 2.55) and provided a Consultation Information Sheet.
- On 23 June 2023, Woodside sent a reminder email to Kato advising of the proposed activity (Appendix F, reference 2.55.1) 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
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 11.8).	No additional measures or controls are required.

INPEX Alpha Ltd

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with INPEX for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 INPEX Alpha on 9 June 2023 based on their function, interest and activities.

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<ul style="list-style-type: none"> Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided INPEX Alpha with the opportunity to provide feedback over a 6 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 9 June 2023, Woodside emailed INPEX advising of the proposed activity (Appendix F, reference 2.55) and provided a Consultation Information Sheet. On 23 June 2023, Woodside sent a reminder email to INPEX advising of the proposed activity (Appendix F, reference 2.55.1) 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
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 11.8).	No additional measures or controls are required.
TGS – NOPEC Geophysical Company		
Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with TGS-NOPEC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:		
<ul style="list-style-type: none"> Consultation Information Sheet was publicly available on the BHP website in March 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 TGS on 17 February 2023 based on their function, interest and activities. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided TGS with the opportunity to provide feedback over a 10 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 17 February 2023, Woodside emailed TGS 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 TGS advising of the proposed activity (Appendix F, reference 2.4.1) 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

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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 11.8).	No additional measures or controls are required.
Peak Industry Representative bodies		
Australian Energy Producers (AEP) (Formerly APPEA)		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with AEP for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023. • Consultation information provided to APPEA on 11 March 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 20 month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 11 March 2022, Woodside emailed APPEA advising of the proposed activity (Appendix F, Reference 1.15). • On 27 May 2022, Woodside emailed APPEA advising of the proposed activity (Appendix F, Reference 1.32.15) • On 16 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 2.2.1) 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
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 11.8).	No additional measures or controls are required.
Traditional Custodians		

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Buurabalayji Thalanyji Aboriginal Corporation (BTAC)

BTAC is established under the Native Title Act 1993 by the Thalanyji people to represent the Thalanyji people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has consulted under Regulation 11A with BTAC by providing sufficient information, a reasonable period of time and opportunity for BTAC to make an informed assessment of the possible consequences of the activities on functions, interests or activities. Woodside has addressed each objection or claim made by BTAC. Woodside has included cultural values and controls relevant to Woodside's understanding of BTAC's functions, interests and activities in its environment plan and in response to topics raised in consultation by BTAC.

As demonstrated in the summary below and consultation record that follows, consultation with BTAC complies with Regulation 11A and is complete.

Sufficient Information:

- Woodside sought direction on BTAC's preferred method of consultation. This has resulted in a face-to-face meeting taking place at BTAC's preferred time and location. BTAC has exchanged multiple correspondence on the activity and there have been telephone engagements with BTAC representatives. Woodside has offered to coordinate further meetings at the location of BTAC's choosing, with BTAC nominated representatives. As sufficient information and a reasonable period have been provided (see below), any further meetings would be considered as ongoing engagement post regulation 11A consultation.
- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Traditional Owner staff to BTAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail as to what was being sought through consultation.
- Suggested that information and requests for feedback be distributed to members as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and "Guideline: Consultation in the course of preparing an environment plan".
- Provided response to questions asked about the activity through consultation. Through these questions, BTAC has displayed an understanding of the activities under this EP.

Reasonable Period:

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 commenced consultation with BTAC on 22 February 2023. Woodside has since addressed and responded to BTAC queries over 10 months, demonstrating a "reasonable period" of consultation.
- Woodside advised that BTAC could request the particular information provided in the consultation not be published (to align with 11A(2)(4)).
- Woodside asked BTAC 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 discussions and written exchanges to further understand the environment in which the activity will take place. BTAC 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 11A, 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 (**Section 11.8**).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on BTAC's functions, interests or activities.

Summary of information provided and record of consultation:

- On 9 February 2023, Woodside emailed BTAC following up on correspondence regarding other EPs and advising that Woodside would be sending information about decommissioning activities for consultation.
- On 13 February 2023, BTAC representative called and spoke to Woodside asking what Woodside was proposing for next steps for consultation and whether Woodside would like to meet with the BTAC Board, the Council of Thalanyji Elders or present at a common law meeting. Woodside said they would be guided by BTAC but suggested meeting initially with the BTAC Board. Following a suggestion by BTAC that the group may benefit from an anthropologist to articulate sea country values, Woodside said they would look at those sorts of requests on a case-by-case basis. Woodside also confirmed they are able to support consultation meetings. A BTAC representative said he would discuss Woodside EPs with BTAC and aim to respond by 20 February 2023.
- On 20 February 2023, BTAC provided a letter to Woodside in relation to consultation on activities unrelated to this EP, however this correspondence did also make assertions and requests that concern general consultation matters between BTAC and Woodside, including:
 - **(1 & 2)** BTAC confirmed that BTAC on behalf of Thalanyji people has interests and that the Thalanyji people have an enduring deep connection to sea country north of Onslow, extending out to islands off the Pilbara coast such as the Monte Bello islands, Barrow Island and the Mackerel Islands.
 - BTAC advised it was seeking the opportunity to engage with Woodside and NOPSEMA on activities unrelated to this EP.
 - **(5)** BTAC advised it has not specifically developed values regarding Sea Country into a format that could be articulated for consultation and seeks support from Woodside to enable BTAC to define and articulate its values on Sea Country in a manner that could be more clearly understood by the offshore sector, government, and the community. This would enable BTAC and Woodside to collaborate to develop effective management plans that can provide adequate protection to sea country values.
 - **(3)** BTAC advised the information in the consultation fact sheets it has received as very general. BTAC seeks support from Woodside to obtain technical support to review the information and provide BTAC and its members with feedback on the project risks to Sea Country and help BTAC contemplate the potential management controls that could be developed to protect its values and interests.
 - **(4)** BTAC requested that emergency response capability is developed and locally provided to be able to respond to potential activities/actions that may cause an impact in the EMBA. BTAC encouraged Woodside and industry to build capacity and capability in BTAC's ranger program so that it could participate in response planning and management activities.

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- **(6)** BTAC noted that ongoing consultation with BTAC will be imperative and likely continuous given recent changes to consultation requirements and this will continue to be a burden on the organisation. BTAC requested that Woodside enter a consultation or engagement framework to ensure BTAC can be properly resourced financially and intellectually to participate in the consultation and management planning processes for the activities.
- On 22 February 2023 Woodside emailed BTAC advising of the proposed activity (Appendix F, reference 2.35) and provided a Consultation Information Sheet. The email requested information on the interests that BTAC and its members may have within the EMBA, information on how BTAC would like to engage, and requested that BTAC provide information to members as required.
- On 22 February 2023, Woodside emailed RRF Australia (support organisation for BTAC) confirming that BTAC requested the email about activities be forwarded to them.
- On 23 February 2023, RRF Australia (support organisation for BTAC) emailed Woodside acknowledging email and informing they would provide advice to BTAC within the requested timeframe.
- On 13 March 2023, BTAC emailed Woodside asking to confirm whether there was a revised submission date in relation to the proposed activities.
- On 17 March 2023, Woodside emailed a letter to BTAC suggesting a forward plan for consultation on all EPs that Woodside had notified BTAC about. Woodside noted that it would formalise the matters outlined in its correspondence by including in each of the Environment Plan statements along the following lines:
 - BTAC for and on behalf of Thalanyji has interests and values in the EMBA and is concerned about the possible impact on these interests and values, including to Sea Country, arising from Woodside's proposed activities.
 - BTAC, with support from Woodside and through the provision of independent expertise, will on an ongoing basis:
 - convey to Woodside the nature of Thalanyji interests and values, noting that BTAC would like to conduct work to articulate those values in a manner that Woodside understands.
 - provide information to Woodside about how those interests and values intersect with the EMBA and how that should be managed.
 - Woodside will engage in ongoing consultation with BTAC for the purposes of ongoing monitoring, management and emergency response associated with environmental risk.
 - Woodside and BTAC will work under an adaptive management approach as the understanding of each other's values and interests, activities, needs and aspirations grow during the course of ongoing consultation. This means that Woodside's Environment Plans may be updated from time to time so that they accurately reflect environmental risk as they relate to BTAC's interests and values, and the management measures that Woodside and BTAC will put in place to avoid and otherwise mitigate and manage environmental risk.
 - BTAC can at any time make direct representations to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) about the nature of BTAC's interests and how they may be affected by Woodside's activities.
 - **(3)** Woodside advised that in response to the provision of independent expert environmental management advice to BTAC, Woodside would be pleased to provide the resources necessary for BTAC to obtain and retain this advice on the basis that such advice is provided by an experienced and reputable oil and gas environmental management expert who is independent of Woodside, and who has the capacity to undertake this work to meet consultation schedules.
 - Woodside suggested a range of organisations for BTAC's consideration who are not working for Woodside.
 - **(4)** Woodside also advised it would also be pleased to support BTAC to acquire anthropological advice.

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- Woodside advised, with reference to the timeframes described about activities unrelated to this EP, that environmental protection and management associated with these activities is subject to an adaptive management approach. This means that consultation between Woodside and BTAC about environmental risk and management responses is ongoing, and changes can be made to improve environmental protection and management practices over time, including in the associated Environment Plans (EPs). Woodside proposed the following next steps:
 - Woodside will formalise the matters outlined in correspondence between Woodside and BTAC by including in each of the Environment Plans statements along the following lines:
 - BTAC for and on behalf of Thalanyji has interests and values in the EMBA and is concerned about the possible impact on these interests and values, including to Sea Country, arising from Woodside's proposed activities.
 - BTAC, with support from Woodside and through the provision of independent expertise, will on an ongoing basis:
 - **(5)** convey to Woodside the nature of Thalanyji interests and values, noting that BTAC would like to conduct work to articulate those values in a manner that Woodside understands.
 - provide information to Woodside about how those interests and values intersect with the EMBA and how that should be managed.
 - **(4)** Woodside will engage in ongoing consultation with BTAC for the purposes of ongoing monitoring, management and emergency response associated with environmental risk.
 - Woodside and BTAC will work under an adaptive management approach as the understanding of each other's values and interests, activities, needs, and aspirations grow during ongoing consultation. This means that Woodside's Environment Plans may be updated from time to time so they accurately reflect environmental risk as they relate to BTAC's interests and values, and the management measures that Woodside and BTAC will put in place to avoid and otherwise mitigate and manage environmental risk.
 - BTAC can at any time can make direct representations to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) about the nature of BTAC's interests and how they may be affected by Woodside's activities.
 - Woodside proposed if BTAC considers it appropriate, that the principles discussed in its correspondence (this 17 March 2023 letter and BTAC's correspondence of 20 February 2023 that was regarding matters unrelated to this EP) apply to the various decommissioning and drilling EPs that Woodside has notified BTAC about. This will ensure these arrangements are formalised into regulatory processes and documentation. As per Woodside's ongoing consultation approach, feedback continues to be assessed through the life of the EPs.
 - Woodside advised BTAC that its letter of 20 February 2023 and this response will be included in the EP. Woodside requested that if their feedback is sensitive, please inform Woodside, and it will make this known to NOPSEMA upon submission of the Environment Plans to ensure this information remains confidential to NOPSEMA.
- On 30 March 2023, Woodside spoke with BTAC to follow up on correspondence described above. BTAC indicated that they desire a consultation agreement and intend to provide correspondence accordingly.
 - **(1 & 2)** On 17 April 2023, Woodside spoke with BTAC by telephone. The BTAC representative stated that they were aware that there were archaeological sites identified on nearshore islands and a cultural obligation to care for the environmental values of sea country. The BTAC representative stated there was in principle agreement to submission of current EPs while continuing to negotiate the collaboration agreement for support for rangers and support for recording of cultural values.

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- On 18 April 2023, BTAC emailed a response regarding Woodside's consultation activities:
 - **(6)** BTAC agreed that subject to formalising arrangements, BTAC agrees in principle for Woodside to include the statements described in our letter dated 17 March.
 - **(6)** BTAC proposed that a Collaboration Agreement would be an appropriate mechanism to provide ongoing feedback to Woodside regarding its activities.
 - BTAC invited Woodside to a board meeting to discuss Scarborough activities and other short, medium and longer term activities, discuss BTAC's strategic plan and details of a collaboration agreement.
- On 19 April 2023, Woodside emailed to accept an invitation from BTAC to attend their forthcoming board meeting and requesting half a day of the board's time, preferably before the first week of May.
- On 28 April 2023, Woodside emailed BTAC to follow up in relation to BTAC's proposed collaboration agreement and discussed Environment Plans for other activities.
- On 4 May 2023, Woodside called BTAC. It was discussed that:
 - Woodside would be sending BTAC more EPs (for other activities) for consultation.
 - **(6)** Woodside is working on draft key terms/principles for the collaboration agreement for BTAC's consideration.
 - A meeting between Woodside and the BTAC board may be possible in June.
 - Woodside intended to submit EPs (including this proposed activity) soon.
- On 4 May 2023, BTAC emailed Woodside to continue discussion regarding a potential future meeting between Woodside and the BTAC board to discuss activities on Thalanyji Country, activities for which BTAC's ongoing consultation is sought, the collaboration agreement and other items not related to this proposed activity. It was proposed that BTAC invite Woodside to a BTAC monthly board meeting, that occurs at the end of the month.
- On 19 May 2023, Woodside phoned BTAC to inform them of some unrelated EPs to be notified and to talk about meeting BTAC to discuss this EP along with other EPs.
- On 19 May 2023, BTAC emailed Woodside about another EP, and to confirm that Woodside will prepare an overview presentation for BTAC on all existing and proposed EPs, including this EP.
- On 24 May 2023, Woodside emailed BTAC in relation to another EP and to confirm they will cover all EPs including this EP in a presentation to BTAC.
- **(6)** On 14 June 2023, Woodside emailed BTAC and attached a letter setting out a draft framework for ongoing consultation which included recording of Sea Country values, commitments to regular three-monthly meetings, support for BTAC's capacity to engage, a set of milestones for agreeing the framework and commencement of implementation.
- On 19 June 2023, Woodside emailed BTAC in relation to another EP and seeking confirmation of meeting date and time.
- On 19 June 2023, BTAC emailed Woodside confirming they would like the new EPs included in the presentation Woodside was preparing for the upcoming meeting "in the near future".
- On the 6 July 2023, Woodside attempted to make contact via phone. BTAC did not answer.
- On the 7 July 2023, Woodside attempted to make contact via phone. BTAC did not answer.
- **(7)** On the 10 July 2023, Woodside followed a phone call with BTAC with an email seeking further confirmation that BTAC did not object to Woodside's submission of a number of EPs (including this one) that it was planning to submit to NOPSEMA. Woodside outlined a series of commitments to BTAC in order to ensure ongoing consultation and that a positive working relationship continued.

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- On 19 July 2023, Woodside emailed BTAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that BTAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 19 July 2023, Woodside emailed BTAC seeking a time to continue discussion regarding a draft presentation to a meeting between Woodside and the BTAC Board about activities on Thalanyji country including other items not related to this proposed activity, and the collaboration principles.
- On 19 July 2023, BTAC emailed Woodside to organise a time for the discussion. BTAC also requested that maps be included of the EMBA's for the various EPs in relation to the Thalanyji native title determination area. In the email, BTAC also proposed to forward Woodside a Costs Acceptance Letter instead to address resourcing for on-going consultation.
- On 20 July 2023, Woodside emailed BTAC a draft presentation for discussion.
- On 26 July 2023, Woodside emailed BTAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- On 26 July 2023, Woodside emailed BTAC Woodside's template presentation further to an earlier draft for consideration.
- On 28 July 2023, Woodside emailed BTAC meeting details to join a Teams meeting of 28 July 2023.
- On 28 July 2023, BTAC emailed Woodside with outcomes of meeting, confirming Woodside has set aside funding for engagement, Woodside wish to meet with BTAC board (or sub-committee) as soon as available to discuss offshore activities/EPs. Confirmed that Woodside would prepare a draft framework agreement to address consultations in relation to NOPSEMA matters.
- On 31 July 2023, Woodside emailed BTAC noting that Woodside would be open to funding a special meeting with the board or sub-committee and requesting a cost estimate for such a meeting.
- On 31 July 2023, Woodside emailed 3 letters to BTAC, 2 of those letters related to other Woodside activities. The 3rd letter outlined support for an ethnographic assessment to:
 - (2) identify sea country values generally sufficient to inform all Woodside EPs.
 - Any work necessary to clarify or define the offshore areas that are relevant to the Thalanyji People.
 - The delivery of interim reports if this will enable prioritising matters considered most critical by BTAC.
 - Woodside will be responsible for all reasonable costs to complete the assessment.
 - BTAC retains intellectual property.
- On 11 August 2023, BTAC emailed Woodside notifying that a response should be expected by the end of the week.
- On 15 August 2023, Woodside telephoned and emailed BTAC following up on correspondence from 31 July 2023, requesting to meet and discuss matters with BTAC.
- On 15 August 2023, Woodside emailed BTAC asking for feedback on the three letters sent on the 31 July 2023 addressing matters discussed previously including Woodside supporting BTAC in their recording of Sea Country values, outlining ethnographic assessment management strategies and noting another matter not related to this EP.
- On 22 August 2023, BTAC emailed Woodside acknowledging correspondence and noting it would come back with a time to meet and progress matters, within the following weeks.
- On 23 August 2023, Woodside emailed BTAC requesting to meet for an initial discussion to layout the various matters that had been under discussion, including BTAC's capacity and priority areas previously identified by BTAC.

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- On 13 September 2023, Woodside emailed BTAC advising of the planned start date for the activity and requested feedback by 1 November 2023. Woodside also once again requested that if BTAC was aware of any other people with whom Woodside should consult, and if there was any information BTAC wished to provide on cultural values, to advise Woodside. Woodside also reiterated that Woodside would take feedback after the commencement of the activity as part of ongoing consultation. The Summary Information Sheet for this activity was attached.
- **(6)** On 14 September 2023, BTAC emailed a letter to Woodside regarding a framework agreement with BTAC. The intent of the agreement would be to formalise a co-ordinated, streamlined approach to progressing meaningful ongoing engagement and consultation. The letter included areas the agreed framework could address, and confirmed that the framework would allow BTAC to comment meaningfully on a range of issues including:
 - How/whether EP activities could impact cultural values, interests and customary or organisational activities and concerns and useful ways these could be addressed.
 - The content of EPs prior to submission to NOPSEMA.
 - Appropriate ways for mitigating risk and ensuring ongoing social licence. A further letter was attached outlining a proposed cost recovery mechanism for consultation activities, and BTAC stated that it did not sanction or endorse any consultation occurring without cost recovery.
 - On 14 September 2023, Woodside emailed BTAC acknowledging BTAC's email of 14 September and planning further review and discussion.
- On 20 September 2023, BTAC emailed Woodside requesting a response from Woodside about accepting the proposed costs acceptance letter which BTAC sent on 14 September 2023 and requested a list of current and ongoing activities on which Woodside was seeking ongoing consultation.
- On 20 September 2023, BTAC emailed Woodside further to their earlier email, requesting a response to BTAC's cost proposal, a list of Woodside activities for ongoing consultation and an update on the status of the framework agreement for BTAC's review.
- **(6)** On 22 September 2023, Woodside emailed BTAC accepting BTAC's proposed consultation fee structure, the list of activities on which Woodside had consulted BTAC and advising that the draft framework agreement was under internal review.
- **(7)** On 26 September 2023, BTAC emailed Woodside acknowledging EP information received, signed costs and acceptance letter and that a draft agreement was currently under internal Woodside review. The email confirmed BTAC would be assisted with legal advice from Banks-Smith & Associates (BSA).
- On 27 September 2023, BSA emailed Woodside clarifying that they are instructed by BTAC on this matter.
- On 4 October 2023, Woodside emailed BTAC via BSA thanking BTAC and stating that Woodside looked forward to an ongoing relationship with BTAC and its legal representation.
- **(9)** On 13 October 2023, BSA Emailed Woodside confirming they act for BTAC on NOPSEMA matters. Among other things, they noted, they required an indemnity clause in the proposed framework agreement against any court action that arose from a claim against BTAC in regard to the consultation they engaged on with Woodside EP's.
- **(9)** On 31 October 2023, BSA emailed Woodside, requesting a response to the email about indemnifying BTAC.
- **(8)** On 1 November 2023, BTAC emailed Woodside inviting Woodside to present on Woodside activities at a 1-hour slot in the BTAC Common Law Holders meeting on 27 November.
- **(8)** On 1 November 2023, Woodside emailed BTAC accepting the offer to present at the Common Law Holders meeting and offering to pay costs for the meeting.
- **(9)** On 2 November 2023, Woodside emailed BSA noting they would not agree to the request to indemnify BTAC against any court proceedings as a result of consultation they engage in with Woodside on EP's. Woodside re-iterated their wish to progress the framework agreement to build their relationship with BTAC. Woodside again noted that they wish to progress other matters, including the commitment to mapping BTAC's sea country values.

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- (9) On 2 November 2023, BSA emailed Woodside requesting more detail about Woodside not supporting the indemnity request.
- On 3 November 2023, BSA emailed Woodside confirming that BTAC would like Woodside to present to a BTAC members meeting on 27 November 2023 in Carnarvon.
- (9) On 18 November 2023, Woodside emailed BSA with further information about why they will not indemnify BTAC as requested in the 13 October 2023 email. Woodside explained that it could harm genuine engagement, may promote 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. Woodside again noted their commitment to build an ongoing relationship with BTAC.
- (8) On 27 November 2023, Woodside attended and presented at the BTAC Common Law Holders meeting. The one-hour timeslot did not allow for taking feedback in relation to EPs but the Common Law Holders meeting were made aware that Woodside had been attempting to meet since January, and had agreed to pay for reasonable consultation costs as well as fund the Sea Country mapping but that these offers had not been taken up.

Ongoing Relationship Building

Woodside is continuing to pursue an ongoing two-way relationship with BTAC including the development of a Collaboration Agreement focused on future opportunities to work together.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) BTAC stated its interests include archaeological sites identified on nearshore islands including the Montebello Islands, Barrow Island and the Montebello Islands.</p> <p>(2) BTAC has a cultural obligation to care for the environmental values of Sea Country.</p> <p>(3) BTAC requested Woodside supports BTAC in obtaining technical advice relating to the proposed activity sent to BTAC.</p> <p>(4) BTAC expressed desire to be involved in local emergency response capability, potentially via an Indigenous Ranger Program.</p> <p>(5) BTAC has not specifically developed values regarding Sea Country into a format that could be articulated for consultation. BTAC sought support from</p>	<p>(1) The nearshore islands identified by BTAC do not fall within the EMBA and will not be impacted by any of the activities set out in the EP.</p> <p>(2) Woodside assessed BTAC’s cultural obligation to care for environmental values of Sea Country to represent potential cultural values.</p> <p>(3) Woodside has offered financial support for technical advice and other support that has not been taken up (e.g., 17 March 2023 letter).</p> <p>(4) Woodside will engage in ongoing consultation with BTAC for the purposes of ongoing monitoring, management and emergency response associated with environmental risk (e.g., 17 March 2023 letter).</p> <p>(5) Woodside agreed to support the articulation and recording of sea country values. Since Woodside formally offered to support BTAC to undertake an ethnographic assessment in July 2023, BTAC has not indicated that it desires to initiate the activity. Completion of an ethnographic assessment is not required to undertake or complete consultation under Reg 11A. Opportunity to undertake this work continues under the proposed Collaboration Agreement (see point 6) as part of ongoing engagement. Woodside has been able to develop a robust understanding of Thalanyji Sea Country cultural values and features in absence of this assessment.</p>	<p>(1) Existing controls considered sufficient as described in Section 7 & 8. The First Strike Oil Spill Response Plan (Appendix D) includes a requirement to notify Traditional Owners whose interests may be affected by a spill.</p> <p>(2) Woodside updated Section 4.7.1.5 to record BTAC’s interests and potential cultural values and assessed potential impact on these, including controls, in Section 7 and 8 of this EP.</p> <p>(3) Not required</p> <p>(4) The Program for Ongoing Engagement with Traditional Custodians (Appendix J) includes commitments to social investment to support Indigenous Ranger</p>

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<p>Woodside to enable BTAC to define and articulate its values on Sea Country in a manner that could be more clearly understood by the offshore sector, government, and the community.</p> <p>(6) BTAC proposed a Collaboration Agreement as an appropriate mechanism to provide ongoing feedback to Woodside regarding its activities.</p> <p>(7) BTAC does not endorse any consultation without appropriate cost recovery BTAC expressed a desire for ongoing engagement and partnership.</p> <p>(8) BTAC invited Woodside to present at the BTAC Common Law Holders meeting.</p> <p>(9) BTAC's legal advisors requested an indemnity clause in the Collaboration Agreement against any court proceedings instigated by other parties against BTAC's consultation with Woodside on Woodside EPs.</p>	<p>(6) Separate from consultation under Reg 11A, Woodside will establish a Collaboration Agreement with BTAC. The agreement would be used to frame ongoing consultation. Sufficient information to allow informed assessment has already been provided by other means, including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members, and slide packs associated with offered face-to-face meetings. Woodside and BTAC have agreed on a Costs Acceptance Letter. Woodside has developed a Framework Agreement for ongoing consultation which is under internal review and will be forwarded to BTAC for their consideration in December 2023. The agreement includes support for recording and articulation of Sea Country values.</p> <p>(7) Woodside assesses that the proposed Collaboration Agreement is an appropriate mechanism for addressing appropriate cost recovery for BTAC. Woodside has already offered BTAC support for technical advice (see 3), and informed BTAC that it would financially support consultation meetings (e.g., 13 Feb 23 discussion). As described in the summary above, Woodside has afforded sufficient information and reasonable time for BTAC to provide feedback in the course of preparing this EP.</p> <p>(8) Woodside met with BTAC members to establish the in-person relationship and re-iterate commitment to information that had previously been relayed through correspondence.</p> <p>(9) There was a delay to the previous target date for the Collaboration Agreement to be sent to BTAC due to the indemnity issue being put forward by BTAC's legal advisors. Woodside refused the request as it would not assist genuine engagement and consultation and leaves Woodside open to possible behaviours and court action from others who Woodside would not be engaging with.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>programs, and support for Indigenous oil spill response capabilities.</p> <p>(5) Woodside has taken all reasonable steps to identify cultural features and heritage features of Thalanyji people within the EMBA. This is described in Section 4.7.1. The proposed Collaboration Agreement recorded in Appendix J enables an ethnographic survey to be undertaken at a later date but is not required to discharge Regulation 11A requirements. 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 11.8).</p> <p>(6) and (7) As identified in Section 11.9 of this EP, Woodside will continue to consult following acceptance of the EP, as required by the implementation strategy as set out in regulation 14(9) of the Environment Regulations, this includes continued engagement regarding the Collaboration Agreement that Woodside seeks with BTAC, which could include ongoing support for BTAC to define and articulate values, provision of ongoing feedback and cost recovery. This is described further in the Program of Ongoing Engagement with Traditional Custodians, Appendix J.</p> <p>(8) Ongoing consultation, as described in Section 5.7 and 11.9 of the EP.</p>
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(9) Not required.

Kariyarra Aboriginal Corporation (KAC)

Kariyarra is established under the Native Title Act 1993 by Kariyarra people to represent the Kariyarra people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with KAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on KAC’s preferred method of consultation. This has not resulted in face-to-face meetings however, KAC has provided feedback in correspondence about the nature of its claims and interests. Woodside has offered to coordinate meetings at the location of KAC’s choosing, with KAC’s nominated representatives. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 11A consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Traditional Owner staff to KAC. 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.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Suggested that information and request for feedback be distributed to members as required.
- 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.

Reasonable Period:

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 Sheet publicly available on the Woodside website since February 2023.
- Consultation information provided to KAC on 24 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to KAC over a 10 month period.
- Woodside advised that KAC can request that particular information provided in the consultation not be published (to align with 11A(2)(4))
- Woodside asked KAC 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 with ample opportunity for genuine two-way dialogue. KAC has provided feedback in correspondence about the nature of its claims and interests.
- Woodside engages in ongoing consultation, beyond that required by Regulation 11A, 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 11.8** of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on KAC functions, interests or activities.
- Woodside does not agree with KAC's assertion that it has not yet completed consultation under regulation 11A for the activity. Woodside has assessed the claims and feedback raised by KAC, 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 KAC's functions, interests, or activities.

Summary of information provided and record of consultation:

- On 24 February 2023, Woodside emailed KAC advising of the proposed activity (Appendix F, reference 2.36) and provided a Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that KAC may have within the EMBA. Woodside also followed up on previous correspondence and phone calls to determine interest for broader EP consultations.
- On 24 March 2023, Woodside emailed the KAC following up on the proposed activity (Appendix F, reference 2.36.1) and to request any feedback.
- On 18 April 2023, Woodside emailed the KAC, to seek guidance whether KAC would like to arrange a meeting for Woodside to clarify any questions they may have (Appendix F, reference 2.43.2) and requested KAC's preferred meeting date(s) at its earliest convenience. An offer of an online or in-person meeting was made.
- On 28 April 2023, Woodside emailed KAC including the email chain and a copy of the Summary Information Sheet demonstrating efforts to engage and notifying that the next step is for the EP for the proposed activity to be submitted to NOPSEMA for technical assessment. It stated that the EP submission is imminent and requested any priority feedback as a priority to reflect in this submission, noting that feedback is also welcome over the life of the EP.
- **(1)** On 2 May 2023 Woodside phone KAC and left a message for a return call to discuss EP. No return call was received.
- **(1)** On 3 May 2023 Woodside phoned KAC and left a message for a return call to discuss EP. No return call was received.
- **(1)** On 9 May 2023, Woodside attended the KAC office to try to meet with the CEO, who was unavailable. Woodside left a message and advised that they would be in town until noon 10 May and would be happy to meet.
- **(1)** On 10 May 2023, Woodside spoke to the KAC CEO and asked for meeting whilst still in South Hedland. Woodside advised that the submission of the EP was imminent, and that Woodside wished to consult and was continuing to seek KACs feedback. The CEO advised he had a full calendar and no time to meet however would try to respond as soon as time permitted. He asked when the EPs were due to submission.
- **(1)** On 12 May 2023, Woodside emailed KAC to confirm telephone conversation of 10 May and to advise that the EPs are due for submission in the following two weeks and advised that Woodside would take feedback for the life of the EP.
- On 18 July 2023, Woodside emailed KAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that KAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

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- On 26 July 2023, Woodside emailed KAC Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.
- **(3)** On 31 August 2023, KAC emailed Woodside apologising for not responding sooner and noting that KAC were seeking legal advice on matters.
- On 31 August 2023, Woodside emailed KAC acknowledging their response.
- **(4)** On 31 August 2023, KAC (via legal representative) emailed Woodside requesting information about another activity unrelated to this EP, indicating they required costs to be met for KAC to be engaged in consultations with Woodside.
- On 10 September 2023, Woodside emailed KAC advising of the planned start date for the activity, and once again requesting if KAC is aware of any other people with whom Woodside should consult, and if there is any information KAC 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 (Appendix F, reference 3.2).
- **(2) (3) (4)** On 13 September 2023, KAC emailed Woodside requesting confirmation that consultation costs would be covered by Woodside. KAC also advised that the Kariyarra have sea rights referenced in their native title evidence. The KAC lawyer affirmed that further consultation will be required now that KAC has a legal advisor.
- **(4)** On 13 September 2023, Woodside emailed KAC’s legal representative confirming in principle agreement to cost recovery, noting that approval would require approximate, reasonable quotes prior to confirmation of approval.
- **(1) (2) (4)** On 28 September 2023, KAC’s legal representative provided a single figure non-itemised quote. The email attached a letter dated 22 September 2023 entitled “Kariyarra and Woodside – Scarborough Project Consultation Requirements” and set out proposed negotiations for a consultation protocol and co-management agreement. The letter did not refer to this activity but referred to values and interests in Sea Country including traditional fishing and gathering rights in the ocean and presence of mythic snakes.
- **(4)** Between 20 -23 October 2023, several emails were exchanged in relation to costs and Woodside reiterated the need for a reasonable quote.
- **(1) (4)** On 26 October 2023, the KAC legal representative emailed Woodside in relation to a separate activity stating Woodside’s proposed cost structure was inadequate and would confer with EDO the Traditional Owners that have taken court action.
- **(1)** On 14 November 2023, KAC legal representative emailed Woodside in relation to a separate activity stating that they had taken their concerns to the EDO.
- **(1) (4)** On 22 November, Woodside emailed KAC reiterating a preparedness to fund consultation for consultation meetings and development of a consultation protocol for ongoing consultation on EPs where consultation for purposes of developing an EP is closed, and for consultation on development of EPs for new activities.
- **(1) (4) (5)** On 23 November 2023, KAC legal representative emailed Woodside agreeing to Woodside’s proposal in the email of 22 November 2023, requesting a draft protocol and suggesting several dates for a meeting between KAC and Woodside.
- On 23 November 2023, KAC legal representative emailed Woodside seeking costs already incurred by his services to KAC.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) KAC has not provided any feedback in relation to this activity and is currently only communicating to Woodside in relation to separate project activities for which they are seeking funding for a consultation protocol and a co-management agreement and have stated they will confer with the EDO.</p> <p>(2) In relation to activities related to a separate project, KAC have advised on values and interests in sea country including traditional fishing and gathering rights in the ocean and presence of mythic snakes. KAC have asserted that they have sea rights under Native Title.</p> <p>(3) KAC have notified Woodside that they have sought legal advice on matters. Woodside have been communicating through their legal representative. KAC lawyer affirmed that further consultation will be required since KAC have sought legal representation.</p> <p>(4) KAC has indicated they require costs to be met for KAC to be engaged in consultations with Woodside.</p> <p>(5) KAC have noted that they want to engage on matters with Woodside and would like to develop an Engagement Protocol.</p>	<p>(1) Woodside responded to KAC's requests and questions in correspondence.</p> <p>(2) Woodside has noted the KAC's values and interests in sea country in Section 4.7.1. Woodside accepts that KAC may have sea country values within the EMBA for this EP. Since February 2023, KAC has not raised any claims or objections in relation to this activity.</p> <p>(3) Woodside demonstrated reasonable effort to consult since February 2023 and engage in genuine two-way dialogue since August 2023. KAC has had sufficient time and sufficient information to participate in consultation. Woodside has continued to consult with KAC (via legal representation) since 31 August 2023. The details of these engagements are described in the consultation summary above.</p> <p>(4) (5) Woodside have agreed in principle to funding KAC and are awaiting finalisations of costings and approvals. Woodside will continue to progress towards an Engagement Protocol as requested by Kariyarra. As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of Reg 11A is complete. Any further engagement with and support offered to KAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (refer to Section 11.8).</p>	<p>(1) (3) (4) & (5) Although consultation for the purpose of Reg 11A is complete, Woodside will continue to engage with KAC through ongoing engagement and continue to progress towards an Engagement Protocol as requested by Kariyarra (Appendix J).</p> <p>(2) Existing controls considered sufficient as described in Section 7 and 8 of the EP. Woodside recognises that KAC holds Sea Country rights and interests that need to be protected (Section 4.7.1).</p>
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Malgana Aboriginal Corporation (MAC)

Malgana is established under the Native Title Act 1993 by the Malgana people to represent the Malgana people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Malgana for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

• **Sufficient Information:**

- Woodside sought direction on Malgana's preferred method of consultation. This resulted in a face-to-face meeting and Malgana provided feedback about the nature of its claims and interests. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 11A consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Traditional Owner staff to Malgana. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Suggested that information and request for feedback be distributed to members as required.
- 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.

• **Reasonable Period:**

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 Sheet publicly available on the Woodside website since February 2023.
- Consultation information provided to Malgana on 17 March 2023 based on their function, interest and activities.
- Woodside has addressed and responded to Malgana over a 9 month period, demonstrating a "reasonable period" of consultation.
- Woodside advised that Malgana can request that particular information provided in the consultation not be published (to align with 11A(2)(4))
- Woodside asked Malgana 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 there has been genuine two-way dialogue. Malgana has provided feedback in about the nature of its claims and interests.
- Woodside engages in ongoing consultation, beyond that required by Regulation 11A, 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 11.8** of the EP).

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- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Malgana functions, interests or activities.

Summary of information provided and record of consultation:

- Between 21 February 2023 and 17 March 2023 the date this EP was notified, Woodside and Malgana had been settling a meeting time to discuss other EPs.
- On 17 March, emailed Malgana advising of the proposed activity (Appendix F, reference 2.37) 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 19 March 2023, Woodside emailed Malgana to propose an alternate date for the meeting so that required project personnel would be available.
- On 22 March 2023, Malgana emailed Woodside to agree the proposed date and coordinate arrangements for the meeting.
- On 23 March 2023, Woodside emailed Malgana to confirm arrangements for the meeting.
- On 4 April 2023, Woodside met with Malgana Aboriginal Corporation (Malgana) representatives in Perth:
 - 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.
 - Malgana asked what arrangements are in place for earthquake tremors, Woodside responded that facilities and equipment are designed to withstand seismic activity.
 - Woodside encouraged Malgana to raise anything which they felt was missing in the information provided during the meeting, or any issues or concerns.
 - (2) Malgana stated that the Shark Bay environment was unique and had the largest living organism in the world. It also contains stromatolites and microbial mats which were amongst the oldest living organisms in the world. Woodside responded that stochastic modelling of the worst-case credible spill scenario for the petroleum activity indicated that these receptors would not be contacted.
 - 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.
 - (3) Malgana expressed that they were very interested in genuine relationship and partnership building with long term structure. Woodside responded that it was open to this and looked forward to working together.
 - Woodside described how EMBA's were prepared and their relevance to consultation.
 - (2) Malgana stated they believed there were flaws in modelling related to Shark Bay hydrodynamics. Woodside responded that nearshore processes may not be very accurate in the model, but it planned for spill response in Shark Bay regardless. Woodside considered the modelling approach robust.
 - Woodside provided an overview of the proposed activity and why it was relevant to Malgana because of the EMBA.
 - Woodside described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks were not expected and unlikely.
 - Woodside asked whether there were any further questions or feedback on the drilling activities; none were received.

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- Woodside provided contact details and invited any further feedback, including NOPSEMA contact details, should Malgana desire to provide feedback directly to the regulator.
- On 20 April 2023, Malgana emailed Woodside, noting their appreciation of Woodside's proactive response in the meeting with Malgana and noted outcomes of the meeting and action points including:
 - There should be a long-term structured response to the relationship.
 - **(2)** Malgana emphasised the sensitivity and importance of Shark Bay both culturally and environmentally.
 - Noted that Woodside indicated a willingness to provide support to Malgana to provide informed feedback.
 - **(2)** A query on water flow from Woodside scientists.
 - **(3)** Training for rangers on disaster response.
 - Woodside to provide timeframe for follow up meeting to discuss all points.
- **(1)** On 18 May 2023, Woodside emailed a letter to Malgana. The letter thanked Malgana Directors, Elders and their team and addressed matters arising from the meeting of 4 April 2023. Including:
 - **(2)** Response about Shark Bay hydrodynamics query, noting that further information has been requested from consultants and an update will be provided to Malgana.
 - **(3)** Response about ranger training programs which will be developed collaboratively with spill response agencies.
 - Reiterating that Malgana is able to provide continued feedback in the course of preparing the EP.
 - **(4)** Noting that Woodside is committed to ongoing consultation beyond that required for the submission of EPs.
- On 19 July 2023, Woodside emailed Malgana NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that Malgana advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed Malgana Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- **(1) (2)** On 1 August 2023, Woodside emailed Malgana with follow up information that Malgana requested about hydrocarbon spill modelling which came out of the meeting of 4 April 2023 with Malgana. Using scientific modelling, Woodside could state that there remains a possibility of oil being transported into Shark Bay, but that this is not likely to occur. Modelling undertaken for this EP did not predict that hydrocarbons would enter Shark Bay.
- **(1) (2) (5)** On 1 August 2023, Malgana emailed Woodside with thanks for the information and noting that Malgana is looking to get an environmental consultant to give advice to their board. Malgana advised they would get some quotes and then come back to Woodside for approval on costs.
- **(5)** On 3 August 2023, Woodside emailed Malgana in response to Malgana's 1 August email, offering to meet, seeking feedback on another activity, and reiterating that Woodside provides various forms of assistance to PBCs to support participation in consultation.
- On 13 September 2023, Woodside emailed Malgana advising of the planned start date for this activity, and once again requesting if Malgana is aware of any other people with whom Woodside should consult, and if there is any information Malgana 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.

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- On 20 October 2023, Woodside emailed the new contact person at Malgana to establish contact and re-send most recent correspondence. Woodside re-iterated that, any information or assistance MAC required including in relation to the meeting in April, Woodside are available at a time and place that suits MAC to meet.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) During face-to-face engagement, Malgana requested further information on topics related to this proposed activity and other Woodside activities which was responded to during the meeting:</p> <ul style="list-style-type: none"> • Ability for infrastructure to withstand seismic activity; • Spill response arrangements; • Concerns regarding hydrodynamic modelling and reflection of flow into the bay; • Malgana indicated that they have particular interest in sea grasses, stromatolites and microbial mats. <p>(2) Malgana expressed the importance of Shark Bay both culturally and environmentally.</p> <p>(3) The Malgana expressed an interest in expanding ranger program.</p> <p>(4) Malgana raised feedback and request for further information a separate project which will be provided as part of ongoing engagement.</p> <p>(5) Malgana advised they were looking to engage an environmental consultant to give advice to their board, and would request Woodside approval for costs once quotes were received.</p>	<p>(1) Woodside responded to Malgana's concerns at a meeting or by correspondence.</p> <p>(2) Woodside has noted Malgana's cultural values. Woodside has responded to Malgana with outcomes of hydrodynamic modelling. Woodside responded to Malgana's query confirming that oceanic circulation and tidal forcing are applied to generate the hydrodynamic model, including tidal flushing within the Bay and the model allows for the possibility of hydrocarbons being transported into Shark Bay. Modelling undertaken for this EP did not predict that hydrocarbons would enter Shark Bay.</p> <p>(3) Woodside will address requests for ranger support under the Program for Ongoing Engagement.</p> <p>(4) Woodside has and will continue to consult with Malgana as part of ongoing engagement for EPs for which consultation is complete under reg 11A, and new EPs.</p> <p>(5) Woodside notes Malgana's advice that they would seek Woodside approval to fund an environmental scientist once Malgana received quotes. Woodside has advised Malgana that it provides support for PBCs to participate in consultation. To date, Malgana have not requested Woodside's approval to fund the environmental scientist.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (refer to Section 11.8).</p>	<p>(1) Existing controls considered sufficient, as described in Section 7 and 8 of this EP.</p> <p>(2) Woodside has updated Section 4.7.1 of this EP to capture Malgana's feedback.</p> <p>(3) Woodside is implementing a program to actively support Traditional Custodians' capacity for ongoing engagement and consultation on environment plans. This is described further in the Program of Ongoing Engagement with Traditional Custodians, (Appendix J).</p> <p>(4) As identified in Section 11.10.2.1 of this EP, Woodside will continue to consult Malgana following acceptance of the EP, as requirement by the implementation strategy as set out in regulation 14(9) of the Environment Regulations.</p> <p>(5) Not required.</p>
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Murujuga Aboriginal Corporation (MAC)

MAC is established under the Burrup and Maitland Industrial Estates Agreement and is the representative body for the Traditional Custodians for Murujuga being the Ngarluma, the Mardudhunera, the Yaburara, the Yindjibarndi and the Wong-Goo-Tt-Oo peoples (collectively Ngarda-Ngarli). MAC is the cultural authority for Murujuga and is responsible for the management and protection of its cultural values.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with MAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on MAC's preferred method of consultation. This resulted in face-to-face meetings being coordinated at the location of MAC's choosing, with MAC nominated representatives. These meetings included Woodside presenting information in a format and style that was readily accessible and appropriate.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to MAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- 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, MAC has displayed an understanding of the activities under this EP.
- Advised that MAC can request that particular information provided in the consultation not be published (to align with 11A(2)(4)).

Reasonable Period:

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 MAC on 24 February 2023 based on their function, interest, and activities.
- Woodside has addressed and responded to MAC over 10 months, demonstrating a "reasonable period" of consultation.

Woodside asked MAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside 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. MAC 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 11A, 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 11.8** of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on MAC's functions, interests or activities.

Summary of information provided and record of consultation:

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- On 24 February 2023, Woodside emailed MAC advising of the proposed activity (Appendix F, reference 2.47) and provided a Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet.
- On 7 March, Woodside spoke with MAC to follow up on the material provided.
- On 30 March, Woodside again spoke with MAC to follow up on the material provided.
- On 3 April MAC emailed Woodside asking for a list of outstanding issues that Woodside would like to progress.
- **(1)** On 5 April 2023 Woodside responded to MAC via email with a list of open topics, which included the request for feedback on the proposed activity. Woodside requested advice from MAC on:
 - How the activity could impact cultural values
 - If MAC proposed anything to be included in the EP prior to submission.
 - If MAC would like a meeting to discuss the activity.
 - Whether MAC did not intend to provide advice prior to EP submission.
- On 12 April, Woodside telephoned MAC regarding several topics including feedback on the proposed activity. MAC responded that their Board of Directors were meeting soon, and that Woodside could expect to hear from MAC with a plan on how to progress consultation on EPs.
- **(2)** On 5 June Woodside received an invitation by phone for the 22 June 2023 to meet and consult with the MAC board and Circle of Elders.
- **(1)** On 22 June Woodside presented to the MAC Board and Circle of Elders and presented the Environment Plan slide pack covering Decommissioning EPs. 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 overview of the decommissioning activities.
 - Described the proposed Stybarrow activity including infrastructure to be removed and the process.
 - Described the types of vessels involved.
 - Described the planned impacts and respective controls of the above activities including: the presence of vessels, seabed disturbance, underwater noise, discharge from vessels, emissions to air and external lighting.
 - 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 each proposed decommissioning 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 MAC and the people it represents may be impacted by any of those activities.
 - Specifically asked the following:

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- 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 MAC for the life of the EP.
 - Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should MAC desire to provide feedback directly to the regulator.
- At the 22 June Meeting MAC asked:
- Whether any of the proposed activities are close to Pluto/Murujuga.
 - Woodside advised the activities proposed under this EP are closer to Exmouth.
 - What condition this infrastructure is in.
 - Woodside advised that it runs large maintenance campaigns to look after all the infrastructure.
 - Whether there were any opportunities for MAC in decommissioning.
 - Woodside advised that for decommissioning assets off Murujuga, it would look to find opportunities for local and Traditional Custodians.
 - Whether there were opportunities for Murujuga Commercial Limited (MCL) in decommissioning.
 - Woodside advised it always looks for an intersection of MCL's areas of interest and Woodside's opportunities and would look to find ways to build long-term relationships between MAC relevant businesses and contractors.
 - How long the removed decommissioned metal would be around for.
 - Woodside explained, only as long as it takes to fill a ship or truck and then it is sent to a recycling facility and that it is recycling around 3,500 tonnes.
- On 18 July 2023, Woodside emailed MAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that MAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
 - **(3 & 4)** On 21 July 2023, MAC emailed a letter to Woodside confirming that MAC had no concerns at that time with regards to the activities the subject of this EP. MAC confirmed its desire for ongoing engagement and appreciated Woodside's commitment to this.
 - **(4)** On 26 July 2023, Woodside emailed MAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
 - On 21 August 2023, Woodside emailed MAC seeking MAC's cultural clarifications about information in relation to Songlines, Elder status and whether cultural information about Murujuga can be held by individuals and not known to others.
 - On 1 September 2023, MAC emailed a letter to Woodside noting the following:
 - In response to Woodside's email of 21 August, MAC consulted with women appointed to their Circle of Elders.
 - MAC is comfortable that the women in the Circle of Elders are the right people to be consulted about these matters.

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- MAC notes that it would be extremely unusual for knowledge to be held by an individual without surrounding groups knowing about it.
- The Circle of elders themselves represent the Ngarda-Ngarli; the collective term for the Traditional Custodians who look after Murujuga Country.
- On 13 September 2023, Woodside emailed MAC advising of the planned start date for the activity, and once again requested that if MAC was aware of any other people with whom Woodside should consult, and if there was any information MAC wished to provide on cultural values, to advise Woodside. Woodside also reiterated that Woodside would take feedback after the commencement of the activity as part of ongoing consultation. The Summary Information Sheet for this activity was attached.

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, MAC requested further information on topics related to this proposed activity which were responded to in correspondence and during the meetings:</p> <ul style="list-style-type: none"> ● Whether any activities were close to Pluto/Murujuga. ● How old Woodside’s assets were. ● Condition of infrastructure. <p>Woodside responded to queries within the meeting.</p> <p>(2) MAC directed that consultation be undertaken with both the Board and the Circle of Elders, which was implemented.</p> <p>(3) On 21 July 2023, MAC sent a letter to Woodside acknowledging the consultation on 22nd June and stating they had no concerns with this EP at this time.</p> <p>(4) MAC stated a desire to continue working with Woodside.</p>	<p>(1) Woodside responded to MAC’s request for further information during face-to-face engagement, and in writing, no further information was requested on these topics.</p> <p>(2) Woodside continues to engage with MAC and has committed to ongoing consultation with MAC Board and Elders on this EP and other EP’s.</p> <p>(3) Woodside accepts that MAC is supportive of this EP submission.</p> <p>(4) Woodside provided MAC with Woodside’s planned Program of Ongoing Engagement with Traditional Custodians and will continue to engage with them as part of ongoing consultation.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>(1) Existing controls considered sufficient as described in Section 7 and 8 of this EP.</p> <p>(2) Not required.</p> <p>(3) Not required.</p> <p>(4) As identified in Section 11.9 of this EP, Woodside will continue to consult MAC following acceptance of the EP, as requirement by the implementation strategy as set out in regulation 14(9) of the Environment Regulations.</p>

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Nanda Aboriginal Corporation (NAC)

Nanda is established under the Native Title Act 1993 by the Nanda people to represent the Nanda people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Nanda for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in **Section 5.5** of the EP. Specifically:

- **Sufficient Information:**
- Woodside sought direction on Nanda's preferred method of consultation. This resulted in a face-to-face meetings and Nanda provided feedback about the nature of its claims and interests. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 11A consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Traditional Owner staff to Nanda. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Suggested that information and request for feedback be distributed to members as required.
- Woodside has provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan".
- Provided response to questions asked about the activity through consultation. Through these questions, Nanda have displayed an understanding of the activities under this Environment Plan.
- Advised that Nanda can request that particular information provided in the consultation not be published (to align with 11A(2)(4)).
- **Reasonable Period:**
- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 Sheet publicly available on the Woodside website since February 2023.
- Consultation information provided to Nanda on 17 March 2023 based on their function, interest and activities.
- Woodside has addressed and responded to Nanda over a 9 month period, demonstrating a "reasonable period" of consultation.
-
- Woodside advised that Nanda could request that particular information provided in the consultation not be published (to align with 11A(2)(4))
- Woodside asked Nanda 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 there has been genuine two-way dialogue. Nanda has provided feedback about the nature of its claims and interests.
- Woodside engages in ongoing consultation, beyond that required by Regulation 11A, 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 11.8** of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Nanda functions, interests or activities.

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Summary of information provided and record of consultation:

YMAC is the Native Title Representative Body (NTRB) for the Yamatji and Pilbara regions, which includes Nanda. NTRBs exist to provide assistance to native title claimants and holders in regard to their native title rights. No native title has been recognised over the EMBA, however YMAC is identified in the North West Marine Parks Network Management Plan as the contact for identifying cultural values in nearby Australian Marine Parks.

- **(3)** On 3 February, Nanda via Yamatji Marlpa Aboriginal Corporation emailed Woodside in response to notification of an unrelated EP with their proposal for consultation, noting:
 - Nanda advised that to ensure they are fully informed, and able to engage in meaningful consultation, the Nanda Board proposes the following:
 - Woodside attend a half-day (or full day, if that is Woodside's preference), workshop with Nanda to explain to the Nanda Board the proposed activities and the EP process; and
 - if, after the presentation Nanda Aboriginal Corporation still considers itself a relevant person, provide funds to Nanda Aboriginal Corporation:
 - to engage an expert(s) (such as environmental scientist and/or marine scientist) to advise the Nanda Board about the impact of the proposed activities; and
 - draft an appropriate response for Woodside to include in the EP.
 - Nanda proposed that as next steps it prepares can prepare a budget and look to arrange a date for Woodside to meet with the Board.
 - Nanda noted that this initial meeting does not in itself constitute 'consultation' on the EP as contemplated by the Guide or other applicable law.
 - **(3)** On 10 February 2023, Woodside emailed Nanda/YMAC advising:
 - That it welcomed the opportunity to meet with Nanda to establish a relationship and requested a budget estimate and Nanda's preferred meeting date(s) at its earliest convenience.
 - It would be pleased to meet at a location that is suitable to Nanda and in funding this meeting would seek to receive some initial feedback from Nanda about their views of the proposed activities.
 - It considers requests to fund independent experts on a case-by-case basis. Woodside noted an expert would need to be agreed as between Nanda and Woodside and be an expert in oil and gas environmental management in the marine context.
 - It plans to send Nanda consultation information on a further three EPs shortly for Nanda's consideration and there will be more scheduled over the course of the year. Woodside will be sending separate emails for each of these EPs.
 - That in anticipation of Woodside and Nanda meeting, Woodside would be grateful for an opportunity to meet with YMAC / Nanda representatives prior to a board meeting, so that Woodside could prepare appropriately.
- On 7 March 2023, Nanda/YMAC emailed Woodside to advise it would revert back shortly with a cost estimate and proposed dates.
- On 13 March, Woodside spoke with Nanda/YMAC legal representatives about coordinating a consultation meeting.
- On 17 March 2023, Woodside emailed YMAC to discuss meeting arrangements with NAC and provided a Consultation Information Sheet (Appendix F, reference 2.38).
- On 19 March Nanda/YMAC emailed Woodside to apologise for delay in response and suggest a date of 19 April 2023, to meet with the Nanda Board
- On 23 March 2023, Woodside emailed NAC/YMAC to accept the proposed date and time.

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- Between 29 March and 5 April NAC/YMAC and Woodside exchanged emails in relation to logistics for the proposed meeting.
- On 19 April 2023, Woodside met with directors and other representatives from Nanda Aboriginal Corporation at a pre-arranged meeting in Geraldton. Hard copy Consultation Information Sheets and simplified Information Sheets were provided 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 overview of the broader decommissioning activities.
 - Described the proposed activity, and the reason for decommissioning.
 - Described the types of vessels involved.
 - Described the planned impacts and respective controls of the above activities including: the presence of vessels, seabed disturbance, underwater noise, discharge from vessels, emissions to air and external lighting.
 - 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 each 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 NAC 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 NAC for the life of the EP
 - Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should NAC desire to provide feedback directly to the regulator.
- **(1) (2)** At the 19 April 2023 meeting Nanda asked:
 - Whether Woodside has ever had an oil spill.
 - Woodside responded that they have had small spills but nothing that had lasting impact, and while worst case spills will be discussed today we have not had anything close to this scale happen before.
 - Whether Woodside activities are resistant to cyclone.

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- Woodside responded that while some of assets would continue operating the execution activities such as seabed intervention and pipelay would be moved away and made safe.
 - About control measures to avoid impacts to migratory whales
 - Woodside described control measures intended to be in place for the activity.
 - For detail on oil spill response particularly shoreline impact.
 - Woodside described hydrocarbon spill preparedness, emergency planning and the various response techniques.
 - Whether everything we put in the water will be removed.
 - Woodside responded that this is correct except for instances where removing it would cause worse environmental damage such as buried anchors.
 - About intended EP submission timeframes.
 - Woodside responded with the proposed timing.
 - Woodside asked whether there were any further questions or concerns with the activity, none were received
- On 18 May 2023, Woodside emailed Nanda with the following:
 - Woodside thanked Nanda for the consultation meeting and their careful consideration of the matters presented
 - Woodside acknowledged their respects that Nanda have interests in the EMBA and noted that we want to ensure impacts are as minimal as reasonably practicable.
 - A high-level overview of presented topics was provided.
 - Woodside notified that the feedback and the letter will be included in Environment Plans that will be submitted to NOPSEMA.
 - Woodside provided responses to questions noted from the meeting that were not related to the proposed activity.
 - **(4)** Woodside noted that Nanda had expressed a desire for ongoing engagement and partnership.
- On 21 July 2023 Woodside emailed Nanda NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that Nanda advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- **(4)** On 25 July 2023, Woodside emailed Nanda (via YMAC) Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.
- On 14 September 2023, Woodside emailed Nanda advising of the planned start date for the activity, and once again requesting if Nanda is aware of any other people with whom Woodside should consult, and if there is any information Nanda 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.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) During face-to-face engagement related to this activity and others, Nanda requested further information on topics related to this proposed activity which were responded to during the meeting and in correspondence shortly afterwards:</p> <ul style="list-style-type: none"> Decommissioning Impacts to migratory whales. Spill response arrangements, particularly for shoreline areas. Waste removal. Disaster management responses (e.g., cyclones). <p>(2) Nanda expressed a general interest in whales. Woodside discussed control measures to protect migratory whales from an ecological perspective during the meeting in which the issue was raised. No further feedback or comment was received on this topic.</p> <p>(3) Nanda requested funding for meetings and to fund an expert environmental scientist.</p> <p>(4) Nanda have expressed interest in ongoing engagement and capacity building and investment opportunities.</p>	<p>(1) Woodside responded to Nanda’s requests for further information during face-to-face engagements in which they were raised, and no further information was requested on these topics.</p> <p>(2) Woodside assessed Nanda’s interest in whales and whale sharks to represent cultural values.</p> <p>(3) Woodside accepted the budget for the 19 April 2023 and on a request for environmental expertise said they fund other requests on a case-by-case basis. Woodside provided the names of organisations Nanda may wish to consider for environmental expertise. No further request for funding has been received by Woodside.</p> <p>(4) Woodside has assessed the Program of Ongoing Engagement with Traditional Custodians will support ongoing consultation with Nanda and address appropriate support for resourcing, separate from consultation under Reg 11A, Sufficient information to allow informed assessment has already been provided by other means, including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members, and a face to face meeting on 19 April 2023 for which Woodside met Nanda’s costs, with appropriate material (pictures, maps, videos) and project attendance allowing opportunity to ask questions and seek further understanding.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>(1) Existing controls considered sufficient, as described in Section 7 and 8.</p> <p>(2) Woodside updated Section 4.7.1 to reflect Nanda’s interests and potential cultural values, including whales, and assessed potential impact on these, including controls, in Section 7 and 8 of this EP.</p> <p>(3) Not required.</p> <p>(4) As identified in Section 11.9 of this EP, Woodside will continue to consult following acceptance of the EP, as required by the implementation strategy as set out in regulation 14(9) of the Environment Regulations</p>
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Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)

NTGAC is established under the Native Title Act 1993 by the Baiyungu people to represent the Baiyungu people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with NTGAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

• **Sufficient Information:**

- Woodside sought direction on NTGAC's preferred method of consultation. This resulted in two face-to-face meetings being coordinated at a location of NTGAC's choosing, with NTGAC nominated representatives. These meetings included Woodside presenting information in a format and style that was readily accessible and appropriate.
- Provided Consultation Information Sheet and Consultation Summary Sheets 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 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 EP.
- Advised that NTGAC can request that particular information provided in the consultation not be published (to align with 11A(2)(4)).
- As per a request from NTGAC, Woodside funded 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, Northwest 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 commenced consultation with NTGAC in February 2023. Woodside has since addressed and responded to NTGAC queries over 10 months, demonstrating a "reasonable period" of consultation.
- Woodside asked NTGAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside has provided a reasonable opportunity for input since January 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 11A, 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 11.8** 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.

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- Woodside does not agree with NTGAC's assertion that it has not yet completed consultation under regulation 11A for 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:

YMAC is the Native Title Representative Body (NTRB) for the Yamatji and Pilbara regions, including NTGAC. NTRBs exist to provide assistance to native title claimants and holders with regard to the recognition and protection of their native title right and interests. No native title has been recognised over the Project Area, however YMAC is identified in the Northwest Marine Parks Network Management Plan as the contact for identifying cultural values in nearby Australian Marine Parks.

- 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.
- On 27 January 2023 Woodside spoke with 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.
- (1) On 1 February 2023, NTGAC/YMAC spoke with 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 spoke with NTGAC to inform that the petroleum activity will be advertised for feedback and that Woodside will provide information on the activity and include it in the scope of the meeting planned for 16 February 2023.
- On 16 February 2023 Woodside met with the NTGAC Board and YMAC representatives, in a pre-arranged meeting to discuss a number of proposed activities, including this proposed activity. Consultation Information Sheets and Simplified Information Sheets were provided in the meeting. Woodside:
 - 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 they felt was 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 would be open for consultation in 2023.
 - Woodside described the proposed activity, its timing and purpose.
 - NTGAC requested a picture of a wellhead, which Woodside noted for future action.
 - 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.

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- Woodside described the worst case EMBA for the activity.
- **(2)** NTGAC asked for further explanation of how the EMBA was developed for the activity, Woodside responded using an example of a deterministic scenario to describe how replicates are combined.
- **(2)** NTGAC asked what probability of a blowout or vessel collision, Woodside responded that it is expected to be about 1 in 10,000 years.
- Woodside concluded discussion of the activity and asked for further feedback or questions, none were received.
- Woodside provided personal contact details for further feedback.
- Woodside provided NOPSEMA contact details, should NTGAC desire to provide feedback directly to the regulator.
- **(2) (3)** YMAC/ NTGAC asked about risk to marine parks and whale sharks in relation to another EP. Woodside explained that vessels move slowly to minimise impacts to marine fauna, and that nothing was planned to go into marine parks.
- **(2)** NTGAC asked whether any oil will come out when equipment is removed. Woodside responded that this is not expected however the activities do have risk of hydrocarbon loss of containment, which was further explained in the meeting.
- **(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.
- Described the proposed activity, noting that this decommissioning activity is in deeper water, the DTM is on the seabed.
- 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.
- On 21 February 2023, Woodside emailed NTGAC via YMAC advising of the proposed activity (Appendix F, reference 2.39) and provided a summary Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet.
- **(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.
- 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 emailed and followed up by phone to NTGAC/YMAC to see if there was 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 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, NTGAC/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.
- On 31 March 2023, Woodside emailed NTGAC/YMAC to follow up with the relevant photos and diagrams requested, 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.

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- 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.
- 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 they would await meeting details.
- On 20 June 2023, NTGAC/YMAC emailed Woodside to acknowledge they will look at the Board's availability for 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.
- On 17 July 2023, NTGAC/YMAC emailed Woodside attaching a draft framework for consultation with PBC's. 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. Conservation
- 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.
- 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 thanking for the pre meeting held on 2 August and confirming the meeting with NTGAC on 15 August 2023.
- 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 meeting for 15 August 2023.
- **(2)** On 15 August 2023, Woodside met with NTGAC. 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 would be open for consultation in 2023;

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- Provided an overview of the broader EP activities that are relevant to the functions, interests and activities of NTGAC;
- Noted that Woodside had previously consulted NTGAC on this EP.
- Woodside specifically asked the following questions, to which no response was received:
 - 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 would 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 wish to provide feedback directly to the regulator.

At the 15 August 2023 meeting NTGAC asked the following questions and provided the following feedback:

- **(2)** NTGAC asked about ballast water discharges. Woodside described Invasive Marine Species requirements and controls such as hull cleaning, quarantine rules and dry docking, and noted the risk was taken very seriously by Woodside;
 - **(3)** YMAC 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;
 - **(5)** 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 NTGAC following up on items arising from the meeting of 15 August 2023, none of which directly related to this activity. Woodside attached the presentation from the meeting. Woodside disagreed that consultation had not commenced on this activity and stated that consultation had commenced and was ongoing.
 - On 6 September 2023, Woodside emailed NTGAC/YMAC with responses to queries about another activity, that were raised in the 15 August 2023 meeting.
 - **(4)** On 6 September 2023, NTGAC/YMAC emailed Woodside acknowledging information and noting it would pass the information over to its environmental scientist, as was stated as part of their proposed framework for consultation at the 15 August 2023 meeting.

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- 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 that if NTGAC was aware of any other people with whom Woodside should consult, and if there was any information NTGAC wished to provide on cultural values to advise Woodside. Woodside also reiterated that Woodside would 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 to correct some information provided in response to a query at the meeting of 16 February 2023. NTGAC asked whether any oil would come out when equipment was removed, Woodside indicated that this was not expected. On further assessment Woodside notes that it will be necessary to cut the flowline into pieces, the email outlines the level of risk associated with the release of 14 m3 of crude oil and sand, Woodside outlines its considerations as to why it is an acceptable risk. Woodside notes that the EP will include a description of the oil and sand release.

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
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<p>(1) On 1 February 2023, in response to Woodside’s question as to whether there are specific families or individuals 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 this proposed 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>(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>(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 location 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 5.9.1 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 9 months, demonstrating a “reasonable period” of consultation.</p> <p>(6) Separate from consultation under Reg 11A 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 Reg 11A consultation ongoing engagement. Sufficient information to allow informed assessment has already been provided by</p>	<p>(1) Not required.</p> <p>(2) Existing controls considered sufficient, as described in Sections 7 & 8.</p> <p>(3) Woodside updated Section 4.7.1.7 to reflect NTGAC’s interests and potential cultural values, including whales and whale sharks, and assessed potential impact on these, including controls, in Sections 7 & 8.</p> <p>(4) Not required</p> <p>(5) Not required</p> <p>(6) & (7) Woodside is implementing a program to actively support Traditional Custodians’ capacity for ongoing engagement and consultation on environment plans. This is described further in the Program of Ongoing Engagement with Traditional Custodians, (Appendix J). 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>(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 are developing the first draft of a Consultation Agreement, and General Report. The proposal for the General Report is that it would outline the nature of the activities for each phase of the project and the risks associated with each of the relevant activities. Woodside are awaiting receipt of the initial draft of the General Report.</p> <p>(7) NTGAC are interested in exploring social investment opportunities with Woodside which may support NTGAC's Strategic Plan.</p>	<p>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 values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8)</p>	
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Ngarluma Aboriginal Corporation (NAC)

NAC is established under the Native Title Act 1993 by the Ngarluma people to represent the Ngarluma people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with NAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in **Section 5.5** of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on NAC's preferred method of consultation. This resulted in a face-to-face meeting being coordinated at the location of NAC's choosing, with NAC nominated representatives. This meeting included information that was readily accessible and appropriate.
- 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.
- Provided Consultation Information Sheets and Consultation Summary Sheets to NAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity 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, NAC have displayed an understanding of the activities under this Environment Plan.
- Advised that NAC can request that particular information provided in the consultation not be published (to align with 11A(2)(4)).

Reasonable Period:

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 NAC on 24 February 2023 based on their function, interest, and activities.
- Woodside has addressed and responded to NAC over 10 months, demonstrating a "reasonable period" of consultation.

Woodside asked NAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside has provided a reasonable opportunity for input since February 2023 and a genuine two-way dialogue has occurred via a meeting and written exchanges to further understand the environment in which the activity will take place. NAC 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 11A, 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 11.8** of the EP).

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Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NAC's functions, interests or activities.

Summary of information provided and record of consultation:

- On 24 February 2023 Woodside emailed NAC advising of the proposed activity (Appendix F, reference 2.41) 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 24 February 2023, NAC emailed Woodside and acknowledged receipt of Woodside's emails and that it was yet to attend to the emails and would do so following the week commencing 27 February 2023.
- On 9 March 2023, Woodside emailed NAC and left a phone message to follow up on the email received 24 February 2023. Woodside advised it was seeking an opportunity for Woodside to present to the NAC board with an EP overview and asked if there has been any progress in terms of securing a preferred day and timeslot.
- On 9 March 2023, NAC emailed Woodside to advise that the contact at NAC was unavailable to meet on 30 March 2023.
- On 9 March 2023, Woodside emailed NAC:
 - Woodside noted that during a previous meeting, NAC had advised its next board meeting would be held on 29 and 30 March and that Woodside would be potentially assigned time on the agenda to present to the NAC Board on either one of those days.
 - Woodside advised that this is an important opportunity to ensure that NAC board have the opportunity to provide feedback on the Environmental Plans and if they have interests in the environment that may be affected (EMBA).
 - Woodside welcomed the suggestion of alternative days/times or ways that it can provide an overview to the board of NAC.
- On 10 March 2023, NAC emailed Woodside to advise that its March Board Meeting was full of overspills from January and February and at this stage would need to leave the environmental plan consultation until the April meeting.
- On 14 March 2023, Woodside emailed NAC to request the dates for the April board meeting and to confirm what time Woodside might be allocated to present at NAC's earliest convenience.
- On 14 March 2023, NAC emailed Woodside to advise that the Board meeting was tentatively set for 29th April at that stage. NAC advised this needs to be confirmed with its Board before it can commit to a time or date.
- Between 12-17 April, NAC and Woodside exchanged emails seeking confirmation of the April board date and whether Woodside would have time on the agenda.
- On 17 April, Woodside emailed NAC noting there had been no confirmation of an April meeting and seeking advice on whether NAC have feedback in relation to the proposed activities. The email explained that Woodside's plan to submit the EP and was seeking pre-submission feedback, noting that feedback could be provided for the life of the EP. Woodside sought an email supporting the approach and looked forward to meeting in future to provide a more detailed overview.
- On 20 April 2023, NAC emailed Woodside noting that the next board meeting would be 26 April 2023 and asking if Woodside still would like to attend.
- On 20 April 2023, NAC emailed Woodside requesting any documentation for the board meeting packs.

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- **(2)** On 20 April 2023, Woodside emailed NAC confirming that Woodside would appreciate time to present at the board meeting.
- **(1 & 4)** On 20 April 2023, NAC emailed Woodside acknowledging receipt of the materials and asked questions regarding impacts to the marine environment and hydrocarbon spill emergency response procedures. NAC stated that it is supportive of decommissioning activities.
- On 21 April 2023, NAC emailed to advise that there was no time for Woodside on the April agenda, but time would be set aside in May, with a tentative date of 17 May 2023.
- On 21 April 2023, Woodside thanked NAC for their response.
- **(4)** On 26 April 2023, Woodside emailed NAC a response to NAC's questions raised on 20 April regarding impacts to the marine environment and emergency response procedures, which arose from the information provided to NAC about this and other decommissioning activities.
- On 28 April 2023, Woodside emailed NAC advising that the next step was for the EP to be submitted but no feedback had been received to date. The email stated that before Woodside submits, Woodside sought to understand whether there were any issues or concerns with the proposed activities that needed to be reflected in the EP.
- **(2)** On 10 May 2023, NAC replied to Woodside stating that they were supportive of the submission of the EP and looked forward to ongoing consultation.
- On 12 May 2023, NAC emailed Woodside to notify that Woodside had been allocated a one-hour window in the NAC Board Meeting on 17 May 2023.
- On 17 May 2023, Woodside presented to the NAC Board of Directors in Karratha:
 - 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.
 - Described the proposed Stybarrow activity, including plugging and abandoning the wells, removing subsea equipment. Woodside will seek a deviation to leave buried equipment in place.
 - Described the types of vessels involved.
 - Described the planned impacts and respective controls of the above activities including: the presence of vessels, seabed disturbance, underwater noise, discharge from vessels, emissions to air and external lighting.
 - 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 each 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 NAC 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?

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- 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 NAC for the life of the EP.
 - Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should NAC desire to provide feedback directly to the regulator.
- At the meeting of 17 May 2023, NAC asked:
- **(1)** How long the equipment had been there.
 - Woodside responded that it commenced in 2006 and there's not enough oil left to operate it.
 - **(1)** Whether the infrastructure could be left to attract fish.
- On 18 July 2023, Woodside emailed NAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that NAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
 - On 26 July 2023, Woodside emailed NAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
 - **(1)** On 11 August 2023, Woodside held a MS Teams meeting with NAC energy adviser the following were noted:
 - Identify EPs for prioritisation.
 - NAC will put together a working group.
 - Bi-monthly consultations.
 - NAC has capacity issues and requires time to deal with matters.
 - On 16 August 2023, Woodside emailed NAC requesting to re-establish regular monthly meetings with the Karratha-based Woodside contact.
 - On 13 September 2023, Woodside emailed NAC acknowledging the previous email, advising of the planned start date for the activity, once again requesting if NAC was aware of any other people with whom Woodside should consult; and if there was any information NAC wish to provide on cultural values, 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 18 September 2023, NAC emailed Woodside proposing:
 - Establishment of Joint Working Group.
 - Woodside to provide draft agreement.
 - Working group meeting to commence in October with monthly meetings.
 - Noting arrangements would cover future scope of consultations with NAC.
 - On 28 September 2023, a NAC representative emailed Woodside requesting a phone discussion about consultations with NAC.

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- (3) On 28 September 2023, Woodside had a phone discussion with a NAC representative who was following up on Woodside consultation requests and wished to progress a consultation meeting with the NAC Working Group in October. The representative requested Woodside:
 - Proposed date/s to meet.
 - Confirmed Woodside would cover cost.
 - Provided any relevant information prior to the meeting.
 - Advised on which EPs it would like to consult with NAC.
 - Woodside agreed to follow up on the above and looked forward to meeting with the Working Group in October.
- On 10 October 2023, Woodside emailed NAC in response to NAC’s email of 18 September 2023, in principle supporting NAC’s proposal for ongoing consultation through a Working Group. Woodside requested meeting dates and asked NAC if it would prefer that Woodside provided a first draft of the agreement.
- On 19 October 2023, Woodside emailed NAC following up on the 1 October 2023 email.
- (3) On 19 October 2023, NAC emailed Woodside advising it would provide a draft engagement letter soon. NAC also asked if there were any urgent matters pending.
- On 2 November 2023, Woodside emailed NAC outlining top priorities and listed future EPs for consultation that were unrelated to this EP and asked for feedback from NAC.
- On 3 November 2023, Woodside emailed NAC with a future EP priority list unrelated to this EP. Woodside also asked NAC for their availability over the following two weeks.
- (3) On 3 November 2023, NAC emailed Woodside asking how long it would take to cover the list of EPs in a meeting. NAC also informed Woodside it would send through an engagement letter that day.
- (3) On 3 November 2023, NAC emailed Woodside a draft engagement protocol letter and stated it looked forward to closing out this matter and scheduling a meeting.

Quarterly Heritage Meetings:

- Woodside convenes a quarterly meeting of Traditional Custodian representatives from the Representative Aboriginal Corporations involved in historical native title claims over the Burrup Peninsula, including NAC. Individual attendees are nominated by their representative Aboriginal Corporations. These meetings are summarised separately in this table.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) During face-to-face engagements related to this activity and others, NAC asked the following.</p> <ul style="list-style-type: none"> • Length of time the asset had been there. • Whether equipment left in place would impact the environment. • Whether fishing could take place on the equipment. <p>(2) NAC emailed Woodside on 20 April 2023, supporting submission of this EP and advised it looked forward to ongoing consultation.</p> <p>(3) NAC proposed establishing a Joint Working Group to engage in meetings with Woodside for ongoing consultation. NAC noted it had capacity issues and required resourcing to cover costs of meeting.</p> <p>(4) NAC raised questions by email on 20 April regarding impacts to the marine environment and hydrocarbon spill emergency response procedures.</p>	<p>(1) During face-to-face engagements, queries were responded to.</p> <p>(2) Woodside notes NAC is supportive of this EP submission.</p> <p>(3) Separate from consultation under Reg 11A, Woodside will establish an agreement with NAC to work with the NAC Working Group. The agreement and Working Group would be used to frame ongoing consultation. 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 responded to NAC's questions regarding impacts to the marine environment and hydrocarbon spill emergency response procedures on 26 April 2023.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>(1) Not required.</p> <p>(2) & (3) Although consultation for the purpose of Reg 11A is complete, Woodside will continue to engage with NAC through ongoing engagement and continue to progress with establishing a framework agreement as part of Woodside's Program of Ongoing Engagement with Traditional Custodians (Appendix J).</p> <p>(4) Not required.</p>
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Robe River Kuruma Aboriginal Corporation (RRKAC)

RRKAC is established under the Native Title Act 1993 by the Robe River Kuruma people to represent the Robe River Kuruma people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with RRKAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in **Section 5.5** of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on RRKAC's preferred method of consultation. This resulted in a face-to-face meeting being coordinated at the location of RRKAC's choosing, with RRKAC nominated representatives. This meeting included information that was readily accessible and appropriate.
- Consultation Information Sheet has been available on the Woodside website since February 2023.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to RRKAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- 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, RRKAC has displayed an understanding of the activities under this EP.
- Advised that RRKAC could request the particular information provided in the consultation not be published (to align with 11A(2)(4)).

Reasonable Period:

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 RRKAC on 15 February 2023 based on their function, interest, and activities.
- Woodside has addressed and responded to RRKAC over 10 months, demonstrating a "reasonable period" of consultation.

Woodside asked RRKAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside 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. RRKAC 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 11A(1), throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see **Section 11.8**).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on RRKAC's functions, interests or activities.

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Summary of information provided and record of consultation:

- On 24 February 2023, Woodside emailed RRKAC advising of the proposed activity (Appendix F, reference 2.46) and provided a Summary Information Sheet (including a link to the detailed information sheet on Woodside's website). The email requested information on the interests that RRKAC have within the EMBA. Woodside also confirmed an already proposed February 2023 meeting and to confirm an already proposed February 2023 meeting (from previous discussions on unrelated EPs). Woodside noted it is seeking RRKAC's feedback as soon as possible on the proposed activity.
- On 9 March 2023, RRKAC emailed Woodside (and copied in CEO of Wirrawandi Aboriginal Corporation (WAC)):
 - RRKAC advised it has discussed the proposed activity with the Robe River Kuruma Heritage Advisory Committee and they have recommended that the interests of Robe River Kuruma people are best served through the joint Heritage Advisory Committee that is required under Yaburara Mardudhunera and Kuruma Marthudunera Indigenous Agreement.
 - RRKAC also suggested that WAC is required to facilitate this Committee and noted there is an emerging need to deal with other proponent matters, so there is an opportunity to link the engagement from a meeting efficiency perspective.
- Between 15-17 March 2023, Woodside exchanged email correspondence with RRKAC (and WAC) in relation to establishing a meeting with the joint Heritage Advisory Committee. The meeting was confirmed for 31 March 2023.
- **(1)** On 31 March 2023, Woodside met with the Robe River Kuruma and Wirrawandi Joint Heritage Advisory Committee (HAC) in Karratha to present on several EPs including this one. 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.
 - Woodside encouraged HAC to raise anything which they feel is missing in the information provided during the meeting, or any issues or concerns.
 - 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 gave an overview of the need for decommissioning and how it generally involves removing infrastructure from the environment when it's no longer needed, unless there is a better environmental outcome from leaving it in place.
 - Woodside explained the proposed activity.
 - Woodside 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.
 - Woodside provided NOPSEMA contact details, should WAC desire to provide feedback directly to the regulator.

At the meeting on 31 March 2023 RRKWAC asked:

- what happens to steel when it is removed.
 - Woodside responded that is recycled where possible.
- if the pipelines are being removed.

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- Woodside responded that they would be.
 - raised that mangroves are an environmental concern in event of a spill.
 - Woodside responded that mangroves are identified as high sensitivity in existing plans for spill response.
 - whether Woodside are talking to other people with regards to Eps.
 - Woodside advised that they were talking to every Aboriginal corporation under Native Title and ILUA's from Port Hedland to Shark Bay for these activities.
 - Woodside asked whether there were any further questions or feedback on decommissioning, none were received.
 - Woodside provided personal contact details for further feedback.
 - Woodside provided NOPSEMA contact details, should WAC desire to provide feedback directly to the regulator.
- On 3 May 2023, Woodside emailed a letter to RRKAC:
 - Woodside thanked the HAC for the meeting, their careful consideration of the matters and feedback provided.
 - Woodside acknowledged that the RRKAC have interests in the EMBA and noted that we want to ensure impacts are as minimal as reasonably practicable.
 - A high-level overview of presented topics was provided.
 - Woodside provided responses to questions noted from the meeting that were not related to the proposed activity.
 - Woodside notified that the feedback and the letter will be included in EPs that will be submitted to NOPSEMA.
 - **(2)** and **(3)** Woodside noted that during the meeting the joint HAC of RRKAC and WAC expressed a desire for ongoing engagement and partnership .and stated that Woodside looks forward to meeting again so that actions to support RRKAC (and WAC) can be put in place
- On 18 July 2023, Woodside emailed RRKAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that RRKAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed RRKAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- On 11 August 2023, RRKAC emailed Woodside in response to another matter and in addition requesting ongoing consultation and training opportunities for rangers to prepare rangers for caring for sea and coastal country.
- On 14 August 2023, Woodside emailed RRKAC thanking them for their response and requesting to meet to discuss training opportunities for rangers.
- On 14 August RRKAC emailed Woodside agreeing to a meeting and indicating they would arrange a suitable time for a discussion.
- On 11 September 2023, Woodside emailed RRKAC acknowledging the previous email, advising of the planned start date for the activity, and once again requesting if RRKAC is aware of any other people with whom Woodside should consult, and if there is any information RRKAC wish to provide on cultural values, and reiterating that Woodside will take feedback after the commencement of the activity as part of ongoing consultation. Woodside confirmed an internal meeting taking place in October 2023 to discuss Jajiwurra Rangers. The Summary Information Sheet for this activity was attached.
- **(2)** On 15 September 2023, RRKAC emailed Woodside advising they have noted Woodside's plans, and that they aren't resourced to adequately respond, and would require Woodside to fund additional resources.

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- **(2)** On 18 September 2023, Woodside sent two emails to RRKAC clarifying that Woodside can provide funding to support consultation activities and requested RRKAC provide quotes and attached a Proposed Program of Ongoing Engagement with Traditional Custodians. An email was also sent from our SAP system a vendor onboarding process. **No response has been received.**
- On 14 November 2023, Woodside emailed RRKAC requesting to meet to discuss what support RRKAC may need to engage fully in consultation. Woodside offered to work around RRKAC's schedule, acknowledging it was AGM season.
- On 14 November RRKAC emailed Woodside noting they were finalising team appointments and would be in touch with the name of a team member.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) During face-to-face engagement, related to this activity and others the RRRKAC/HAC requested further information on topics related to this proposed activity which was responded to during the meeting:</p> <ul style="list-style-type: none"> • Where is the market for Woodside’s gas. • Whether the removal of hydrocarbons cause global gravitational instability. • Aftermath of a gas leak. • Woodside’s response to a hydrocarbon spill. <p>(2) RRRKAC noted that they are insufficiently resourced to fully engage and respond regarding EPs.</p> <p>(3) RRRKAC/HAC expressed a desire for ongoing engagement and partnership.</p>	<p>(1) Woodside responded to RRRKAC/HAC’s requests for further information during face-to-face engagements, and no further information was requested on these topics.</p> <p>(2) Woodside supports ongoing engagement and have responded to RRRKACs advice about the limitations on their resources. Woodside has offered to support RRRKAC in correspondence sent on May 3, 2023, and September 2023, however these offers have not been taken up. As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of Reg 11A is complete. Any further engagement with and support offered to RRRKAC will be for the purpose of ongoing engagement.</p> <p>(3) Woodside has assessed the Program of Ongoing Engagement with Traditional Custodians will support ongoing consultation with RRRKAC and address appropriate support for resourcing, separate from consultation under Reg 11A, Sufficient information to allow informed assessment has already been provided, including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members, and a face to face meeting on 31 March 2023 for which Woodside met RRRKAC’s costs, with appropriate material (pictures, maps, videos) and project attendance allowing opportunity to ask questions and seek further understanding.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>(1) Existing controls considered sufficient, as described in Section 7 and 8.</p> <p>(2) & (3) Although consultation for the purpose of Reg 11A is complete, Woodside will continue to engage with RRRKAC 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 J). This includes addressing RRRKAC’s resourcing issue for ongoing consultation via a Framework Agreement.</p>
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Wirrawandi Aboriginal Corporation (WAC)

WAC is established under the Native Title Act 1993 by the Mardudhunera and Yaburara people to represent the Mardudhunera and Yaburara people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with WAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in **Section 5.5** of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on WAC's preferred method of consultation. This resulted in a face-to-face meeting being coordinated at a location of WAC's choosing. This meeting included information that was readily accessible and appropriate.
- 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 WAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity 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, WAC have displayed an understanding of the activities under this EP.
- Advised that WAC could request the particular information provided in the consultation not be published (to align with 11A(2)(4))

Reasonable Period:

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 WAC on 24 February 2023 based on their function, interest, and activities.
- Woodside has addressed and responded to WAC over 10 months, demonstrating a "reasonable period" of consultation.
- Woodside asked WAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside 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. WAC 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 11A, 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 11.8**).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on WAC's functions, interests or activities.

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Summary of information provided and record of consultation:

- On 21 February 2023, Woodside spoke with WAC to discuss a consultation meeting.
- On 24 February 2023, Woodside emailed WAC advising of the proposed activity (Appendix F, reference 2.42) and provided a Consultation Information Sheet. Woodside noted it was seeking WAC's feedback as soon as possible on the proposed activity. Woodside also requested confirmation of the opportunity to meet with the WAC Board when they are next due to meet in Perth in March. Further details and associated costs would be discussed once the meeting has been confirmed, in discussion with Woodside.
- On 24 February 2023, WAC emailed Woodside acknowledging receipt of EP information and advising that a meeting date was yet to be finalised and that further details and associated costs would be discussed once the meeting date had been confirmed.
- On 7 March 2023, WAC emailed Woodside to provide a formal quote and advise a draft agenda had been set and Woodside had been allotted Thursday 23 March 2023 for presentation.
- On 7 March 2023, Woodside emailed WAC thanking WAC for sending through a quote and advised it was looking forward to receiving further detailed information.
- On 7 March 2023, Woodside emailed WAC following up on the 23 March meeting date seeking details.
- On 8 March 2023, Woodside phoned WAC and agreed to proceed with the meeting.
- On 9 March 2023, Robe River Kuruma Aboriginal Corporation (RRKAC) emailed Woodside (and copied in CEO of WAC) to advise the environment impacts of this EP and other unrelated EPs have been discussed with the Robe River Kuruma Heritage Council and they have recommended that the interests of Robe River Kuruma people are best served through the joint Heritage Advisory Committee that is required under Yaburara Mardudhunera and Kuruma Marthudunera Indigenous Land Use Agreement. The email advised Wirrawandi is required to facilitate this committee.
- On 15 March 2023, Woodside sent WAC a follow up email, requesting details of the meeting with WAC Board and Elders on 23 March 2023 in Perth.
- On 15 March 2023, WAC emailed Woodside:
 - WAC advised the 23 March 2023 meeting has been scheduled and arranged.
 - WAC advised that as discussed previously the intention is to present to WAC Directors and Elders on information requiring WAC feedback.
 - Woodside has continued to engage WAC on the proposed activity and in relation to presenting at the upcoming Board and Elders meeting.
- On 16 March 2023, WAC emailed Woodside regarding the Joint Heritage Advisory Group meeting on 31 March 2023 confirming conference room booking in Karratha.
- On 17 March 2023, Woodside emailed WAC advising it was looking forward to connecting and would ensure relevant representation to provide the suite of EP information overviews, and that they would cover the broader community activity for awareness as requested.
- On 17 March 2023, WAC emailed Woodside suggesting a meeting date in Perth on 29 March 2023
- On 20 March 2023, Woodside emailed WAC confirming meeting arrangement for 29 March 2023.
- (1) On 23 March 2023, Woodside presented to a meeting of the WAC Board and Elders in Perth, 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.

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- 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 overview of the decommissioning activity and noted that Woodside are legally required to remove infrastructure from the environment when it is no longer required, unless there is a better environmental outcome by leaving in place.
- Described the proposed Stybarrow activity.
- 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 each proposed decommissioning 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 WAC PBC 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 WAC for the life of the EP.
- Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should WAC desire to provide feedback directly to the regulator.
- At the 23 March meeting WAC asked:
 - **(1)** About underwater drones (ROVs) and how often they are used.
 - Woodside responded that they are used often and safer than using divers.
 - **(1)** How much planning for decommissioning is done in early phases of the project.
 - Woodside responded that for these older facilities there wasn't much but it's a requirement now that it is planned from the start.
 - **(1) (2)** WAC asked whether activities could be stopped during whale migration.
 - Woodside responded that it is not planned and explained controls to limit potential impacts on whales.
 - **(1)** How spills are prevented and how hydrocarbons can be contained following a spill.
 - Woodside explained preventative and mitigative controls, emergency preparedness and various spill response techniques.
 - **(1)** Whether Woodside has had any major spills.
 - Woodside responded that there have not been any major spills with impacts beyond the near field.

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- **(1)** Whether the hydrocarbon can ignite.
 - Woodside responded that there could be a fire only in the close vicinity of the spill.
- **(1)** Asked whether the diesel would be on the surface only.
 - Woodside responded that there will be a slick, but the diesel would go into the water column.
- Asked what happens if something is dropped into the ocean.
 - Woodside responded that it wouldn't cause a spill because there's no hydrocarbons in the subsea equipment and they must retrieve dropped items.
- **(1)** Asked how long diesel stays in the environment.
 - Woodside responded that the majority evaporates within two days but what goes into the ocean will stay longer.
- **(1)** WAC stated that this kind of information sharing is important, and that Woodside's time is appreciated. WAC asked whether this type of information is broadly available to the community.
 - Woodside responded that there are several open community sessions available in the region where it could be discussed.
- WAC indicated that since they are engaging with a number of energy industry operators, they will consider the information provided and discuss internally before any further response to Woodside.
- On 24 March, Woodside responded thanking WAC for the meeting and proposed a venue and time for the next meeting.
- On 24 March 2023, WAC responded thanking Woodside for the meeting and accepted the invite for the next meeting.
- On 24 March 2023, Woodside responded thanking WAC for its email.
- **(1)** On 31 March 2023, Woodside met with the Robe River Kuruma and Wirrawandi Joint Heritage Advisory Committee (HAC) in Karratha:
 - 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 HAC to raise anything which they feel is missing in the information provided during the meeting, or any issues or concerns.
 - 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 provided a general overview of decommissioning and described the Stybarrow activity.
 - Woodside explained planned and unplanned environmental risks and impacts for decommissioning activities, noting that the worst-case consequence for the activity is a diesel spill from a vessel collision. Woodside gave an overview of emergency spill response planning.
 - HAC had no questions about the Stybarrow activity.
- **(1)** On 3 May 2023, Woodside emailed a letter to WAC regarding the Perth meeting with WAC Directors and Elders on 23 March:
 - Woodside thanked WAC for the meeting and their careful consideration of the matters.

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- Woodside acknowledged that WAC has interests in the EMBA and noted that Woodside want to ensure impacts are as minimal as reasonably practicable.
 - A high-level overview of presented topics was provided.
 - Woodside provided responses to questions noted from the meeting that were not related to the proposed activity. Woodside notified that the feedback and the letter will be included in EPs that will be submitted to NOPSEMA.
- **(1)** On 3 May 2023 Woodside emailed a letter to WAC regarding the meeting with the joint Robe River Kuruma and Wirrawandi Joint Heritage Advisory Committee (HAC) on 31 March:
 - Woodside thanked the HAC for the meeting, their careful consideration of the matters and feedback provided.
 - Woodside acknowledged that both WAC and RRRKAC (represented together as HAC) have interests in the EMBA and noted that they want to ensure impacts are as minimal as reasonably practicable.
 - A high-level overview of presented topics was provided.
 - Woodside provided responses to questions noted from the meeting that were not related to the proposed activity.
 - Woodside notified that the feedback and the letter will be included in EPs that will be submitted to NOPSEMA.
- On 18 July 2023, Woodside emailed WAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that WAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 20 July 2023, WAC emailed Woodside following Woodside's presentation at a 19 July meeting with WAC about other EP's and requested a list of all Woodside activities and EP's in preparation.
- On 26 July 2023, Woodside emailed WAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- On 10 August 2023, Woodside emailed WAC providing a list (as requested by WAC) of current and pending EPs.
- On 10 August 2023, WAC emailed Woodside with thanks for the information and with a query about EMBA's.
- On 15 August 2023, Woodside emailed WAC providing an explanation of the query in relation to EMBA's and EMBA development.
- On 15 August 2023, WAC emailed Woodside with thanks for the clarification and noting they would provide a formal response shortly.
- **(3)** On 31 August 2023, WAC emailed a letter to Woodside proposing a framework agreement to provide a streamlined, formalised approach to consultation between WAC and Woodside. This included a list of activities that WAC is to be consulted on including this one.
- On 11 September 2023, Woodside emailed WAC acknowledging the previous email, advising of the planned start date for the activity, and once again requesting if WAC is aware of any other people with whom Woodside should consult, and if there is any information WAC 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 11 September 2023, WAC emailed Woodside with a copy of the letter of 31 August, advising that WAC does not object to Woodside progressing EPs for the activities outlined on the proviso that Woodside and WAC enter into a framework agreement to provide for ongoing meaningful consultation with WAC and YM members in relation to activities the subject of EPs, as outlined in the attached letter on terms suitable to both parties within a reasonable period (nominally within the next 2-3 months).
- **(3)** On 12 September 2023, Woodside emailed WAC confirming receipt of the email of 11 September.

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- On 28 September 2023, Woodside emailed WAC informing them who their focal point is.
- **(3)** On 3 October 2023, WAC emailed Woodside requesting a catch up.
- On 3 October 2023, Woodside emailed WAC suggesting dates during October to meet up.
- On 3 October 2023, WAC emailed Woodside confirming availability on suggested dates.
- On 3 October 2023, Woodside emailed WAC confirming dates and meeting location.
- On 20 October 2023, Woodside and WAC met in Perth. The meeting was held with the new CEO and Chairperson to discuss current EPs and how parties intend to support each other through the process. Confirmed WAC's preferred EP consultation process and discussed recent correspondence between previous CEO and Woodside. WAC confirmed they are going to address all open EPs as a matter of priority. Noted the WAC AGM is taking place in approximately 10 days.

Quarterly Heritage Meetings:

- Woodside convenes a quarterly meeting of Traditional Custodian representatives from the Representative Aboriginal Corporations involved in historical native title claims over the Burrup Peninsula, including WAC. Individual attendees are nominated by their representative Aboriginal Corporations. These meetings are summarised separately in this table.
- Copies of slides are made available to representative Aboriginal Corporations for the general awareness of members who were not able to attend individual meetings.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) During face-to-face engagement, related to this activity and others, with the WAC Board, directors and circle of Elders, WAC requested further information on topics related to this proposed activity which was responded to during the meeting:</p> <ul style="list-style-type: none"> • Early planning of decommissioning • Emergency preparedness • The relevance of the EMBA to consultation • Whether activities stop during whale migration. • Potential impacts on whales. • Whether a diesel spill would only be on the surface. • How long diesel stays in the environment. • What happens if something is dropped into the ocean. • How soon is a spill responded to. • Whether the turtle monitoring program is still in place. <p>(2) WAC expressed a general interest in whales. 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) WAC expressed that it does not object to Woodside progressing the proposed activity on the provision that Woodside and WAC enter</p>	<p>(1) Woodside responded to WAC's requests for further information during face-to-face engagements, and no further information was requested on these topics.</p> <p>(2) Woodside assessed WAC's interest in whales to represent potential cultural values.</p> <p>(3) Woodside has confirmed and accepts that WAC is seeking to establish a framework agreement for the purposes of ongoing consultation with Woodside.</p> <p>Separate from consultation under Reg 11A, Woodside will establish a framework agreement with WAC. The agreement will 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>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 11.8).</p>	<p>(1) Existing controls considered sufficient, as described in Section 7 and 8, specifically 7.3 which assesses and adopts controls to minimise impacts to whale communication from noise and Section 8.2 which assesses and adopts controls to reduce the likelihood and consequence of diesel spills.</p> <p>(2) Woodside updated Section 4.7.1 to record WAC's interests and potential cultural values, including whales and assessed potential impact on these, including controls, in Section 7 and 8.</p> <p>(3) Although consultation for the purpose of Reg 11A is complete, Woodside will continue to engage with WAC 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 J).</p>
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into a framework agreement to provide for ongoing meaningful consultation a desire for ongoing engagement and partnership through a Framework Agreement.

Yindjibarndi Aboriginal Corporation

Yindjibarndi Aboriginal Corporation is established under the *Native Title Act 1993* by the Yindjibarndi people to represent the Yindjibarndi people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Yindjibarndi for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in **Section 5.5** of the EP. Specifically:

Sufficient Information:

- Consultation Information Sheet has been available on the Woodside website since February 2023.
- Provided Consultation Information Sheet and Consultation Summary Sheets to Yindjibarndi. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity 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.
- Woodside has provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan".

Reasonable Period:

- Woodside published advertisements in a national, state, and relevant local newspapers including The Australian, The West Australian, Northwest 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 Yindjibarndi on 24 February 2023 based on their function, interest, and activities.
- Woodside has addressed and responded to Yindjibarndi over 10 months, demonstrating a "reasonable period" of consultation.

Woodside asked YAC it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by Regulation 11A, 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 11.8** of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Yindjibarndi functions, interests, or activities.

Summary of information provided and record of consultation:

- On 24 February 2023, Woodside emailed the Yindjibarndi Aboriginal Corporation advising of the proposed activity (Appendix F, reference 2.44) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website). The email requested information on the interests that Yindjibarndi and its members may have within the EMBA.
- **(1)** On 26 February 2023, Yindjibarndi emailed Woodside to advise that Yindjibarndi will not be providing any comment on the proposed activity and noted it respected the traditional owners whose land and sea lies adjacent to, and within the precinct of, the projects, and will leave any comment and advice to be provided by them.
- On 28 February 2023, Woodside emailed Yindjibarndi to thank them and noted the response.

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- On 18 July 2023, Woodside emailed Yindjibarndi NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that Yindjibarndi advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed Yindjibarndi Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- **(2)** On 1 August 2023, in response to the email of 26 July 2023 regarding Woodside's Program of Ongoing Engagement with Traditional Custodians, YAC stated consultation for oil and gas activities be directed to Ngarluma Yindjibarndi Foundation Ltd (NYFL).
- Refer to NYFL consultation record from 11 August 2023 below.

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) Yindjibarndi stated that they would not be providing comment on offshore activities and that they would prefer that traditional owner groups with land and sea adjacent to and within the precinct of the projects provide comment.</p> <p>(2) Yindjibarndi has instructed Woodside that it will be represented by NYFL in ongoing discussion about EP's.</p>	<p>(1) Woodside agrees and respects Yindjibarndi's position that traditional owners whose land and sea are adjacent to or within the precinct of the projects should be able to provide comment.</p> <p>(2) Woodside will engage with NYFL on behalf of Yindjibarndi for ongoing consultation related to this activity, separate from consultation under Reg 11A.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>(1) Not required.</p> <p>(2) Future correspondence will be sent through NYFL. Although consultation for the purpose of Reg 11(A) is complete, Woodside will continue to engage with NYFL through ongoing engagement and continue to progress with establishing a framework agreement as part of Woodside's Program of Ongoing Engagement with Traditional Custodians (Appendix J).</p>

Yinggarda Aboriginal Corporation (YAC)

YAC is established under the Native Title Act 1993 by the Yinggarda people to represent the Yinggarda people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with YAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in **Section 5.5** of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on YAC's preferred method of consultation. 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.
- 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 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 EPs" and Guideline "Guideline: Consultation in the course of preparing an EP".
- Provided response to questions asked about the activity through consultation. Through these questions, YAC has displayed an understanding of the activities under this EP.
- Advised that YAC could request the particular information provided in the consultation not be published (to align with 11A(2)(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 function, interest, and activities.
- Woodside has addressed and responded to YAC over 8 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 11A(2)(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.

Woodside engages in ongoing consultation, beyond that required by Regulation 11A, 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 11.8**).

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.

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Woodside does not agree with YAC's assertion that it has not yet had sufficient time for consultation under regulation 11A for the activity. Woodside has assessed the claims and feedback raised by YAC, 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 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, reference 2.45) 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 20 March 2023, Woodside emailed YAC/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/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 email 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, Woodside emailed to confirm the pre-meet conversation.
- On 27 March 2023, YAC/YMAC agreed by telephone that Woodside would organise the meeting.
- On 30 March 2023, YAC/YMAC emailed Woodside apologising that they were no longer available to meet.
- On 30 March 2023, Woodside emailed YAC/YMAC to acknowledge their unavailability and to give the name of a new focal point.
- On 27 April 2023, Woodside emailed the YMAC lawyer to confirm timing and location for the face-to-face meeting on 3 May, 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 emailed and phoned Woodside, confirming that they no longer represented YAC and that the meeting on 3 May was cancelled. Gumala Aboriginal Corporation is now representing YAC and YMAC is in the process of hand over, including correspondence with Woodside.
- On 27 April 2023, Woodside acknowledged YMAC email re Gumala Aboriginal Corporation transition to a new service provider.
- On 28 April 2023, Woodside attempted to call Gumula Aboriginal Corporation and left a voicemail to establish connection.
- On 28 April 2023, Woodside emailed Gumula 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 are interested.

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- On 8 May 2023, Woodside phoned Gumula Aboriginal Corporation to follow up the email, explaining that it was seeking to consult YAC on the proposed activity and noted that a planned meeting had been cancelled. Gumula 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 emailed and phoned Gumula Aboriginal Corporation to speak with someone about consulting YAC on EPs. Reception said they would have a member of the Governance team call back.
- On 15 June 2023, Gumula Aboriginal Corporation (via YAC) emailed Woodside stating they were keen for Woodside to consult to the group. They indicated a date had been set for 6 July 2023 for a consultation meeting.
- On 19 June 2023, Woodside emailed Gumula 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, Gumula Aboriginal Corporation emailed Woodside inviting attendance at a half day YAC Board meeting to discuss other EP matters.
- On 21 June 2023, Woodside emailed Gumula 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, noting:
 - The types of vessels involved.
 - 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:

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- 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.
 - **(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. 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, 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 3 August 2023, Woodside emailed YAC the NOPSEMA guidelines again with the new lawyer (BSA) addressed in the email.
- 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.

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- 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 BTAC 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.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) 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. • Expressed concern about potential impacts to patterns of whales, and potential collisions. <p>(2) YAC expressed a general interest in whales. 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 Reg 11A, 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 on the activity. Woodside met with YAC's nominated representatives, at location of YAC's choice on 5 July 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 5 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 reg 11A 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 11.8).</p>	<p>(1) Existing controls are considered sufficient, as described in Sections 7 and 8.</p> <p>(2) Woodside updated Section 4.7 to record YAC's interests, including whales and assessed potential impact on these, including controls, in Section 8.4.5.</p> <p>(3) Although consultation for the purpose of Reg 11A 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 J.</p> <p>(4) Not required.</p> <p>(5) Not required.</p> <p>(6) No 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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Bundi Yamatji Aboriginal Corporation (BYAC)

BYAC is established under the Native Title Act 1993 by the Bundi Yamatji people to represent the Bundi Yamatji people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with BYAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on BYAC's preferred method of consultation. This has not resulted in a face-to-face meeting as information provided was sufficient for BYAC to determine that they did not require direct consultation with Woodside, however, they requested to be kept informed of activities.
- Consultation Information Sheet was publicly available on the BHP website in March 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 BYAC. These set out details of the proposed activity, the location, timing 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".
- Woodside advised that BYAC can request that particular information provided in the consultation not be published (to align with 11A(2)(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 BYAC on 17 March 2023 based on their function, interest, and activities.
- Woodside has addressed and responded to BYAC over 9 months, demonstrating a "reasonable period" of consultation.

Woodside asked BYAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside has provided a reasonable opportunity for input since February 2023 and a genuine two-way dialogue has occurred via a meeting and written exchanges to further understand the environment in which the activity will take place. BYAC has engaged with the detail of the activity advising that it did not require direct consultation. The details of these engagements are described in the consultation summary below.

Woodside engages in ongoing consultation, beyond that required by Regulation 11A, 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 11.7 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on BYAC's functions, interests or activities.

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Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 17 March 2023, Woodside emailed BYAC advising of the proposed activity (Appendix F, reference 2.73) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interest that BYAC and its members may have within the EMBA, information on how BYAC would like to engage, and requested that BYAC provide information to its members as required. On 30 March 2023, Woodside called BYAC to request a time to meet and consult about the activities. On 30 March 2023, Woodside followed up the phone call to BYAC with an email requesting to meet and understand BYAC’s interests, which may be impacted by the proposed activities. Woodside also asked for BYAC’s preferred form of consultation. On 2 April 2023, Woodside emailed BYAC to check whether the previous email on 30 March 2023 had been received. (1) (2) (3) (4) On 4 April 2023, BYAC responded to Woodside and advised that the activities were not directly within the Yamatji Nation ILUA area and therefore there was no specific requirements for direct consultation with BYAC. However, BYAC requested they be kept informed of the activities given there was the possibility that the Hutt River coastline areas or the areas identified for consultation in the Yamatji Sea Connection Indigenous Protected Area (SCIPA), as well as migrating marine life that are part of the life inhabiting or traversing through the SCIPA area (Hutt River coastline to the Abrolhos Houtman Islands) may be impacted by unplanned spills from the proposed activity. BYAC advised that over the next two years it would be undertaking a Sea Country Indigenous Protected Areas (SCIPA) project to develop a Management Plan for the area. One of the tasks of this project would be to investigate the Yamatji sea connections which would help determine how such impacts may affect Yamatji cultural heritage values. BYAC also said they would pass on contact details to their project coordinator for further consultation opportunities in the future. (2) On 14 September 2023, Woodside emailed BYAC in regards to other activities including the Stybarrow Plug & Abandonment EP. The Summary Information Sheet for this activity was attached (Appendix F, reference 2.81) (4) On 15 September 2023, BYAC emailed Woodside confirming receipt of the previous email and noted the information was provided to the SCIPA Project Manager to consider if there was any updated interest and information, in line with information previously sent through on 4 April. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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<p>(1) BYAC advised it did not require direct consultation on this activity due to its location.</p> <p>(2) BYAC advised it would like to be kept informed of progress in relation to proposed activities.</p> <p>(3) BYAC advised marine life migrating through the SCIPA area of Hutt River coastline to the Abrolhos Houtman Islands may be impacted by the proposed activity.</p> <p>(4) BYAC is undertaking a project to investigate the Yamatji sea connections and determine how proposed activities may affect Yamatji cultural heritage values. BYAC advised it would pass on details of the project coordinator.</p>	<p>(1) & (4) Woodside accepts BYAC's cultural interests relating to the broad protection of migrating marine fauna and has addressed this in the existing controls as described in Section 7 and 8.</p> <p>Woodside accepts that BYAC will be undertaking further projects over the next two years and may wish to consult with Woodside on its cultural activities, functions and interests in this area. No further updates or responses have been made on this matter to date.</p> <p>(2) & (3) Woodside accepts that BYAC does not intend to provide feedback as activities are not directly within the Yamatji Nation ILUA, but BYAC wishes to be kept informed of activities. Woodside will send BYAC a Start of Activity Notification.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>(1) & (4) Existing controls considered sufficient, as described in Section 7 and 8. Feedback from BYAC has been noted in Section 7 and 8.</p> <p>(2) & (3) Although consultation for the purpose of Reg 11A is complete, Woodside will continue to engage BYAC through ongoing engagement and will send Start of Activity Notifications as BYAC requested to be kept informed of progress in relation to proposed activities (Section 11.9 and Table 11-4 of the EP).</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.

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with YMAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in **Section 5.5** of the EP. Specifically:

Sufficient Information:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- 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.
- Provided Consultation Information Sheet 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 with controls in a digestible, plain English format.

Reasonable Period:

- Consultation information provided to YMAC on 21 February 2023 based on their function, interest and activities.
- Woodside addressed and responded to YMAC over a 10 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 11A, 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 11.8**).

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 21 February 2023, Woodside emailed YMAC advising of the proposed activity (Appendix F, reference 2.40) and provided a Consultation Information Sheet.
- On 13 March 2023, Woodside emailed YMAC as to whether YMAC considers itself a ‘relevant person’ under subregulation 11 A (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.
- 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.
- **(1)** On 20 March 2023, YMAC replied to confirm that in its view it is a ‘relevant person’ under Regulation 11A(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.

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- On 20 March 2023, Woodside emailed YMAC to thank it for its reply and to advise that that this assessment would be included in Woodside’s EPs.
- On 20 March 2023, YMAC emailed Woodside confirming that they agree to their advice being included in reporting (YMAC is the representative for NTGAC and Nanda Aboriginal Corporation and was the representative for Yinggarda Aboriginal Corporation until April 2023).
- 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.
 - attaching Woodside’s Program for Ongoing Engagement with Traditional Custodians.
 - stating that Woodside is open to considering an industry funded position at YMAC to support the work they are facilitating.
 - seeking a meeting with YMAC in relation to the draft consultation framework at YMAC’s earliest convenience.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) YMAC has provided feedback that in its view it is a 'relevant person' under subregulation 11 A (1) of the Environment Regulations for the purposes of consultation on EPs only in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation and does not intend to provide substantive comment on the content of EPs.</p> <p>(2) YMAC has provided feedback that it is seeking an industry funded position to support consultations for this and other activities.</p> <p>YMAC has provided a draft consultation framework to assist the consultation process.</p>	<p>(1) Woodside notes YMAC's position that it does not intend to provide substantive comment on EPs.</p> <p>(2) Woodside has assessed the Program of Ongoing Engagement with Traditional Custodians will support ongoing consultation with YMAC and/or the groups it represents. This can address appropriate support for resourcing, separate from consultation under Reg 11A, 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 values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>(1) Not required.</p> <p>(2) Although consultation for the purpose of Reg 11A 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 Ongoing Engagement with Traditional Custodians, Appendix J.</p>
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Self-identified Traditional Owner Entity

Ngarluma Yindjibarndi Foundation Ltd (NYFL)

NYFL was created to act as Trustee for the Trust under the Northwest Shelf Agreement 1998 struck between the Ngarluma and Yindjibarndi registered native title claimants, the NWS JVs and Woodside, prior to the resolution of the Ngarluma and Yindjibarndi native title claim. Its purpose is to carry on the business of enterprise development, investment and social welfare.

In 1999 the Ngarluma and Yindjibarndi native title claim was settled with the Federal Court appointing, at the request of the common law native title holders, the Ngarluma Aboriginal Corporation (NAC) as PBC to represent the communal interests of the Ngarluma people and the Yindjibarndi Aboriginal Corporation (YAC) as PBC to represent the communal interests of the Yindjibarndi people. Woodside consulted both NAC and YAC as relevant persons in the course of preparing this EP.

NYFL self-identified and has advised it is relevant for this EP.

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with MAC for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in **Section 5.5** of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on NYFL's preferred method of consultation.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to NYFL. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Woodside has provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan".

Reasonable Period:

- Consultation Information Sheet publicly available on the BHP website in March 2022.
- Updated Consultation Information Sheet publicly available on the Woodside website since February 2023.
- 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.
- Updated Consultation Information Sheet and Summary Information Sheet provided to NYFL (via the KCLG) 17 February 2023.
- Woodside has provided the NYFL with the opportunity to provide feedback over a 10 month period.

Woodside asked NYFL 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 opportunity has been provided to further understand the environment in which the activity will take place.

Woodside engages in ongoing consultation, beyond that required by Regulation 11A, 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 11.8** of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NYFL's functions, interests or activities.

Summary of information provided and record of consultation:

- On 4 October 2022, NYFL emailed Woodside:

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- NYFL thanked Woodside for taking the time to talk through ways in which complex information such as that which relates to EPs can be appropriately communicated to NYFL and its TO board and members.
- (7) NYFL advised that as discussed, at present the language and communication approach in EPs, such as that sent to NYFL on 23 September 2022 about an unrelated EP to this activity, is not appropriate for NYFL.
- (1) NYFL also thanked Woodside for communicating to the business that NYFL is a 'relevant person' for activity.
- Between October 2022 and March 2023, while Woodside and NYFL have weekly communications on other matters, there was a hiatus on communication due to changes to activity scheduling and description of EMBA's.
- On 30 November 2022, Woodside and NYFL held the Woodside NYFL NWS quarterly relationship meeting, which is resourced by Woodside to enable meaningful participation by Traditional Custodians. There was a separate discussion about holding a separate meeting for EPs generally.
- On 14 February 2023, NYFL emailed Woodside to see if the accessible information for Traditional Custodians had been prepared.
- On 17 February 2023, Woodside emailed NYFL (via the Karratha Community Liaison Group) advising of the proposed activity (Appendix F, reference 2.49) and provided a Consultation Information Sheet.
- On 1 March 2023, Woodside and NYFL held the Woodside NYFL NWS quarterly relationship meeting which is resourced by Woodside to enable meaningful participation by Traditional Custodians. The meeting discussed Woodside and NYFL reviewing the NWS 1998 Agreement for renegotiation. There was a separate discussion about holding a separate meeting for EPs generally.
- On 8 March 2023, Woodside emailed NYFL (via the Karratha Community Liaison Group) following up on the proposed activity (Appendix F, reference 2.49.1) and seeking feedback on the activity.
- On 20 March 2023, Woodside emailed NYFL offering a meeting to present to the Board in relation to another activity and other proposed activities.
- On 22 May 2023, Woodside emailed NYFL information in relation to an EP not related to this activity.
- (7) On 22 May 2023, the NYFL CEO replied saying that they were requesting information in an appropriate format for Traditional Custodians and saying that the language and approach was not appropriate for NYFL's members.
- On 24 May 2023, Woodside spoke to NYFL by phone, explained that the information sheets were developed with a Ngarluma Traditional Custodian but that the best way to understand the materials was to take Woodside up on our offer to present to NYFL. These presentations include images and the subject matter experts are on hand to answer questions. Presentations had been well received by other groups. Woodside had budget for consultation meetings and could provide support for the meetings to occur.
- On 8 June 2023, NYFL emailed Woodside about several matters including a request for "further information/culturally appropriate comms" for this activity.
- On 8 June 2023, Woodside reconfirmed previous offers to meet with NYFL in relation to the activity and other activities unrelated to this EP for the purpose of face-to-face consultation. Explained that these presentations have been well received from groups. Explained also that the summary information sheets provided were developed by Indigenous representatives for a Traditional Owner audience. Requested that if face to face consultation was not preferred by NYFL, whether they could provide some direction as to alternatives. Woodside reiterated they cover consultation costs to and can meet in Roebourne, assuming that is preferred.
- On 21 June 2023, Woodside called into the NYFL offices to advise of the community information session to be held in Roebourne (Appendix F, reference 2.61).

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- (3) On 28 June 2023, Woodside emailed NYFL confirming a consultation date of 20 July and requesting NYFL send through a quote for costs.
- On 28 June 2023, NYFL responded saying they would hold off on committing to a date while they had a chance to digest the outcomes of the NOPSEMA Summit.
- On 29 June 2023, Woodside emailed NYFL in relation to an activity unrelated to this activity and asking whether they wished to be consulted.
- On 29 June 2023, NYFL responded stating that they were waiting to agree to national framework for consultation between industry and First Nations to be resolved before they consult on EPs. This email was referring to the NOPSEMA Summit.
- (2) On 10 July 2023, Woodside emailed NYFL seeking clarity in relation to their request. Woodside stated they understood the outcomes of the NOPSEMA Summit were as recorded by the facilitator and were communicated to all participants as follows:
It was agreed that:
 - There is a need for a National Summit of Indigenous Groups and Traditional Owners to consult together and agree what they require and what their collective and individual concerns may be;
 - Government (DISR) will assist by mapping and compiling a list of all traditional owner groups that should be invited to this Summit,
 - Kimberley Land Council and other PBCs will form a Steering Committee to draft the agenda for this Summit,
 - APPEA will seek membership approval to facilitate by funding this Summit, and
 - The Summit will be independently facilitated.
 - APPEA to further consult with their members in order to get some agreement on priorities and next steps for Industry;
 - After the National Summit of Indigenous Groups, the first of a number of meetings will be held between a smaller representative Traditional Owners group and a smaller representative Industry group, the latter to be coordinated through APPEA; and
 - There will be ongoing parallel consultations in relation to current EPs, which will continue in accordance with what is required by Reg 11(A)(1)(d) of the OPGGSA Environment Regulations.
 - Woodside stated it is committed to supporting the National Summit of Traditional Owners and is committed to industry and Traditional Owners working together to agree consultation frameworks. Woodside noted, however, this will take time and necessarily must occur in parallel to ongoing consultation, with operators obliged to consult pursuant to Reg 11(A). Woodside also stated they were committing to a program of ongoing consultation for the life of the EP that would be happy to discuss that with NYFL.
- On 10 July 2023, NYFL stated that they did not agree with the facilitators record of the NOPSEMA Summit and reiterated that they looked forward to developing the negotiation framework.
- On 18 July 2023, Woodside emailed NYFL NOPSEMA's Consultation Guideline, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also requested that NYFL advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed NYFL Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- On 26 July 2023, NYFL emailed Woodside in response to Woodside's planned Program of Ongoing Engagement with Traditional Custodians, noting their expectation that Woodside would fund NYFL to support consultation.

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- On 11 August 2023 NYFL emailed Woodside in response to another matter noting that NYFL and Yindjibarndi Aboriginal corporation look forward to progressing discussion with Woodside on the proposed program of consultation. A letter attached with the email set out, among other things, NYFL and YAC's views on consultation, method of communication and funding for participation for NYFL and YAC.
- On 15 August 2023, Woodside emailed NYFL thanking them for their correspondence and requesting availability to meet.
- Between 18 August 2023 and 28 August, emails were exchanged between Woodside and NYFL confirming details of an upcoming meeting, including an agenda for discussion.
- **(3) (4)** On 30 August 2023, Woodside met with NYFL to discuss consultation processes and engagement with NYFL and YAC going forward, NYFL requested funding for three NYFL positions. NYFL stated one month consultation timeframes were not acceptable.
- On 12 September 2023, Woodside emailed YAC/NYFL advising of the planned start date for the activity, and once again requesting if YAC/NYFL is aware of any other people with whom Woodside should consult, and if there is any information YAC/NYFL 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.
- **(5) (6)** On 12 September 2023, NYFL emailed Woodside confirming receipt of the 12 September email and noting that there may be people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of this activity, and that there may also be additional cultural and environmental values that relate to the area that have not been identified or communicated to Woodside by those who have been previously consulted in relation to this activity.
- **(2)** On 27 October 2023, NYFL emailed Woodside NYFL's position statement regarding industry consultation and seeking an update from Woodside "a framework for consultation". (At this stage Woodside had understood that NYFL would not enter a framework until this had been settled by the First Nations Sea Country Summit in November 2023)
- On 3 November 2023, Woodside emailed NYFL, stating that they would revert shortly and were also happy to meet to discuss short term solutions as suggested by NYFL.
- On 7 November 2023, Woodside emailed NYFL stating it understood that NYFL did not want to progress the proposal until after the Summit that was to take place in November, and advising Woodside was available from the 20th of November 2023 to meet.

NYFL is also consulted through its membership on the Karratha Community Liaison Group (KCLG) and the Quarterly Heritage Group

Woodside will continue to pursue an ongoing two-way relationship with NYFL under the Proposed Program of Ongoing Engagement with Traditional Custodians.

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<p>(1) NYFL self-identified and advised Woodside that they are a relevant person for this activity.</p> <p>(2) NYFL advised it wished to pause consultation until after the First Nations Sea Country summit is held and a framework for consultation developed. Woodside understands that the First Nations Sea Country Summit was scheduled for the end of November 2023.</p> <p>(3) NYFL requested that Woodside employ three Ngarluma/Yindjibarndi Traditional Owners who would consult with NYFL members.</p> <p>(4) NYFL stated that time frames must be longer than one month for consultation.</p> <p>(5) NYFL expressed that there may be people who, in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected who have not yet been provided the opportunity to provide information.</p> <p>(6) NYFL expressed that there may be additional cultural and environmental values that relate to the area that have not been communicated to Woodside.</p> <p>(7) NYFL requested consultation material suitable to a Traditional Custodian audience.</p>	<p>(1) Woodside has consulted with NYFL under regulation 11A of the OPGGS.</p> <p>(2) Woodside disagrees that an outcome of the 22 June 2023 summit, was to pause consultation until a national framework had been progressed at the First Nations Sea Country Summit in November. Sufficient information and a reasonable period was already been provided prior to the Summit.</p> <p>(3) Woodside does not consider NYFL's request that Woodside employ three Ngarluma/Yindjibarndi traditional owners to consult with NYFL members a reasonable proposal. Woodside's consultation efforts are informed and undertaken by Woodside personnel with significant experience in First Nations relations, including Indigenous employees. Woodside assesses that the proposed Framework Agreement would be an effective mechanism to address resourcing for ongoing consultation. Woodside accepts NYFL's 12 September 2023 email that states their short- and long-term needs to support ongoing consultation. As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of Reg 11A for this activity is complete. Any further engagement including support with NYFL will be for the purpose of ongoing engagement.</p> <p>(4) Woodside has already provided NYFL with reasonable time to participate in consultation and has been engaging since February 2023.</p> <p>(5) As described in Section 5.9 of the EP, Woodside's consultation methodology provided Traditional Custodians with the opportunity to be aware of the proposed activity and to participate in consultation. Woodside considers this methodology has afforded all people whose spiritual connection to the environment that may be affected a reasonable opportunity to consult. Consultation with NYFL has not identified any other groups or individuals relevant to communally held functions, activities or interests. NYFL have been provided with reasonable time to respond with this information since the emails from Woodside of 18 July and 12 September specifically requesting this information, but no response to this request has been received.</p> <p>Woodside has also consulted with Ngarluma and Yindjibarndi Aboriginal Corporations who are the Representative Aboriginal Corporations nominated by the Ngarluma and Yindjibarndi people respectively to represent the communally held interests of the Ngarluma and Yindjibarndi people.</p>	<p>(1) Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on NYFL's functions, interests or activities.</p> <p>(2) Not required.</p> <p>(3) (Although consultation for the purpose of Reg 11A is complete, the proposed Framework Agreement will address appropriate NYFL resourcing. This is described further in the Program of Ongoing Engagement with Traditional Custodians, Appendix J.</p> <p>(4) Not required.</p> <p>(5) Methodology described in Section 5.8 adequately addresses this claim.</p> <p>(6) Description of cultural values and heritage features is included in Section 4.7.1 of the EP.</p> <p>(7) Not required.</p>
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- (6) Woodside has a robust understanding of the environment, cultural values and heritage features based on publicly available information and consultation with relevant persons. This is described in **Section 4.7.1** of the EP.
- (7) Woodside recognises that sufficient information must be provided in a form that is accessible and appropriate to the audience. Woodside has regularly asked NYFL for their preferred processes of consultation including on the 24 May 2023, 8 June 2023 and 30 August 2023 to inform Woodside's consultation processes with NYFL. In response to NYFL's requests for changes, Woodside developed and provided Summary information sheets developed with a Ngarluma Traditional Custodian for a Traditional Custodian audience. Woodside offered face to face consultation meetings resourced by Woodside to enable meaningful Traditional Custodian consultation, which include visual aids and videos. Woodside accepts NYFL's support in consultation animation videos which are being finalised by Woodside to further support culturally appropriate consultation with groups. As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of Reg 11A for this activity is complete. Any further engagement with NYFL will be for the purpose of ongoing engagement.

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 11.8**)

Historical cultural heritage groups or organisations

Western Australian Museum

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with the WA Museum for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Western Australian Museum on 16 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to Western Australian Museum over a 10 month period.

Summary of information provided and record of consultation:

- On 16 February 2023, Woodside emailed the Western Australian Museum advising of the proposed activity (Appendix F, reference 2.22) and provided a Consultation Information Sheet.
- On 23 February 2023, WA Museum responded, thanking Woodside for their email and confirmed it had no feedback for the proposed EP.
- On 9 March 2023, Woodside responded, thanking WA Museum for their response.

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 Western Australian Museum advised it had no feedback with respect to the proposed activities.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside acknowledged WA Museum’s response that it had no feedback on this EP.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>The Environment Plan demonstrates that there are no known underwater heritage sites or shipwrecks within the Petroleum Activities Area and identifies that there are no credible impacts to the values of any underwater heritage or shipwrecks as a result of planned activities (Section 4.7.1). While impacts to underwater heritage sites or shipwrecks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 8.2 of this EP.</p> <p>No additional measures or controls are required.</p>

Local government and community representative groups or organisations

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Shire of Carnarvon

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with the Shire of Carnarvon for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Shire of Carnarvon on 16 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to Shire of Carnarvon over a 10 month period.

Summary of information provided and record of consultation:

- On 16 February 2023, Woodside emailed Shire of Carnarvon 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 Shire of Carnarvon advising of the proposed activity (Appendix F, reference 2.5.1) and provided a Consultation Information Sheet.
- On 3 May 2023, Woodside had a meeting with the Shire of Carnarvon (SoC) on a separate EP and provided an overview of activities proposed under this EP.
 - The SoC noted that they were struggling to see how the Shire may be impacted by Woodside's activities that it has been receiving consultation information for. Noted that the Town of Coral Bay is within the Shire of Carnarvon which is closer to Woodside's activities, but this is still quite a distance.
 - Noted that the townsite of Coral Bay may be more directly within Woodside's area of potential impact and is very reliant on the environment. Noted that there are fisheries based in Carnarvon going out to Shark Bay which are an important part of the economy and lifestyle.
 - Woodside thanked the SoC for its advice around engagement and agreed that the meeting was a good opportunity to establish a relationship with the SoC and determine the best method to engage moving forward.
 - Woodside explained recent changes to consultation and the expansive area titleholders are now required to consult on, referred to as the EMBA.
 - Woodside explained that the EMBA for each EP is determined based on the largest spatial extent where unplanned events could potentially have an environmental consequence. Explained that for each of the EPs Woodside would be discussing with the SoC, the EMBA is determined by the unlikely event of a hydrocarbon release.
 - Woodside explained that the SoC has the opportunity to provide feedback on each of Woodside's proposed activities that it would be providing an overview of.
 - Woodside provided an overview of the proposed activities, including:
 - Woodside's approach to decommissioning.
 - Advised there are three oil fields being decommissioned in a similar area and showed a map - Enfield, Stybarrow and Griffin.
 - Explained that the production facilities have already been removed.
 - The SoC noted that in the event of a spill, it would be good to understand where the Shire sits as part of the response to protect its habitats.
 - Woodside explained it has oil spill response plans in place specific to the EP which it provides to DoT and AMSA for feedback as the response agencies.

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- The SoC thanked Woodside for the overview of activities and advised it would consider the information within the context of the Shire's interests in the environment and its link to its economy.
- The SoC noted that the risk profiles of Carnarvon compared to the townsite of Coral Bay are different and noted that Coral Bay is geographically close to Exmouth. SoC requested additional clarity on the contact points for Coral Bay for each of the activities.
- On 5 May 2023, Woodside sent an email to the Shire of Carnarvon thanking the Shire for the 3 May 2023 meeting and provided a consolidated email with all proposed activities Woodside is consulting the Shire on, including the activities proposed under this EP. Woodside confirmed it is looking into the likelihood of contact along Coral Bay for each of the EPs and committed to providing this additional information.
- On 29 May 2023, the Shire of Carnarvon responded and:
 - thanked Woodside for providing the consultation information.
 - noted that it appreciated being kept informed and felt that the meeting was useful in allowing the Shire to better understand the potential risks for areas within the Shire and the mitigations measures in place.
 - requested that should risks to the Shire change for these projects or new risks emerge for these or other projects, it would appreciate being advised.
 - advised it had no further comment.
- On 29 May 2023, Woodside responded and:
 - Thanked the Shire for its feedback with respect to a number of EPs, including the activities proposed under this EP.
 - Noted the Shire's advice that:
 - it would like to be updated if risks to the Shire change for these projects or new risks emerge for these or other projects.
 - the Shire has no further comments.
 - Noted that at the 3 May 2023 meeting, Woodside committed to providing the Shire with the likelihood of contact along Coral Bay for each of the above EPs. Woodside:
 - explained the EMBA being determined by the highly unlikely event of a hydrocarbon release from activities within the scope of the EP.
 - explained that when Woodside models the EMBA for a hydrocarbon spill, we consider both the environmental and visual amenity risk. The outputs identify which areas of the marine environment could be exposed to hydrocarbons at levels exceeding certain threshold concentrations in the unlikely event of a spill.
 - summarised the probabilities of surface, shoreline and in-water hydrocarbon contact at Coral Bay for a number of EPs, including the activities proposed under this EP.
- On 29 May 2023, the Shire of Carnarvon responded and thanked Woodside for the information. The Shire suggested that Woodside brief their Local Emergency Management Committee as most of the risk is only in the event of an emergency and established contact with the committee.
- On 8 June 2023, Woodside responded to Shire of Carnarvon (SoC) and welcomed the opportunity to meet with the Local Emergency Management Committee requesting availability and offering to co-ordinate for Woodside.
- On 20 July 2023, Woodside followed up with SoC requesting to attend its Local Emergency Management Committee meeting.
- On 20 July 2023, SoC responded inviting Woodside to attend its next LEMC on August 16, 2023.

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- On 21 July 2023, Woodside responded to SoC accepting the invitation to attend the committee meeting.
- On 16 August 2023, Woodside attended SoC LMEC meeting and provided:
 - an overview of proposed activities relevant to the Shire including this EP
 - outlined consultation approach and explanation of Environment that May Be Affected (EMBA) as a modelling process of the broadest extent a diesel spill could spread based on a number of conditions.
 - Detail of oil spill response approach in the highly unlikely event of a hydrocarbon spill
 - Woodside key steps when activating an oil spill response plan
 - SoC thanked Woodside for presenting to the committee and had no questions or concerns.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>Woodside had a meeting with the Shire of Carnarvon, where the Shire provided feedback that:</p> <ul style="list-style-type: none"> • they were struggling to see how the Shire may be impacted by Woodside's activities that it has been receiving consultation information for. • undertook to give the Council an update and if they have further input, they would reach out to Woodside. • requested Woodside send an email with the full list of EPs it had consulted the Shire on, so they had it in one place, including this EP. • requested Woodside provide the contact points for Coral Bay for each of the environment plans discussed, including the activities proposed under this EP. • requested Woodside brief the Shire's LEMC. <p>At the request of the Shire, Woodside had a further meeting with the Shire's Local Emergency Management Committee to outline oil spill response approach. No questions or comments were raised</p>	<p>Woodside has addressed the Shire of Carnarvon's feedback, including:</p> <ul style="list-style-type: none"> • providing additional information on the proposed activities. • provided a consolidated email with all EPs Woodside was consulting the Shire on, including the activities proposed under this EP. • providing the Shire with the contact points to Coral Bay for each of the EPs, including the activities proposed under this EP. • meeting with the Shire's LEMC to provide an oil spill briefing. <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 11.8).</p>	<p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on the Shire of Carnarvon's functions, interests or activities. No additional measures or controls are required.</p>
<p>Shire of Exmouth</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Shire of Exmouth for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to Shire of Exmouth 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 Shire of Exmouth over an 18 month period.

Summary of information provided and record of consultation:

- On 27 May 2022, Woodside emailed Shire of Exmouth advising of the proposed activity (Appendix F, reference 1.32.20)
- On 17 February 2023, Woodside emailed Shire of Exmouth 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 Shire of Exmouth advising of the proposed activity (Appendix F, reference 2.28.1) 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
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 11.8).	No additional measures or controls are required.
Shire of Ashburton		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Shire of Ashburton for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Shire of Ashburton on 17 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to Shire of Ashburton over a 10 month period.

Summary of information provided and record of consultation:

- On 17 February 2023, Woodside emailed Shire of Ashburton advising of the proposed activity (Appendix F, reference 2.29) 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.

As stated, the summary above demonstrates that Woodside's consultation with Shire of Ashburton for the purpose of 11A(1) is complete. However as per Woodside's ongoing commitment to consultation, engagement with Shire of Ashburton continues as summarised below;

Ongoing consultation:

- 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.
- 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 Local and District Emergency Management Committee (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:

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- 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;
 - Details of the oil spill response approach in the highly unlikely event of a hydrocarbon spill;
 - Woodside's key steps when activating an oil spill response plan;
 - Shire of Ashburton thanked Woodside for presenting to the committee and no questions or concerns were raised.
- On 27 November 2023, Woodside emailed Shire of Ashburton with Woodside contact details for the LEMC, 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>The Shire of Ashburton met with Woodside and attended a presentation on decommissioning activities in May 2023. No concerns or questions were raised about the proposed activity.</p> <p>Shire of Ashburton requested Woodside to present to Shire's Local and District Emergency Management Committees on its planned responses to such events, before any activities commence. Advised the next meeting was November 2023.</p> <p>At the request of the Shire, Woodside had a meeting with the LEMC to outline oil spill response approach. No questions or comments were raised.</p>	<p>Woodside presented at the Shire of Ashburton's LEMC on oil spill response.</p> <p>Woodside notes that no objections or claims were raised about the proposed activity by the Shire.</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 11.8).</p>	<p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on Shire of Ashburton's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>

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Exmouth Community Liaison Group (ECLG) (formerly Exmouth Community Reference Group)

- 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

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- Santos
- Community Member

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with the ECLG for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 2022, and the updated Consultation Information Sheet has been available on the Woodside website since February 2023.
- Consultation information provided to Exmouth CLG on 28 March 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 CLG over a 20 month period.

Summary of information provided and record of consultation:

- On 28 March 2022, Woodside emailed the Exmouth Community Liaison Group advising of the proposed activity (Appendix F, reference 1.29) and provided a Consultation Information Sheet.
- On 7 April 2022, Woodside/BHP attended the Exmouth Community Liaison Group meeting and provided an update on the proposed activity.
- On 27 May 2022, Woodside emailed Exmouth Community Liaison Group advising of the proposed activity (Appendix F, reference 1.32.21)
- On 21 September 2022, Woodside attended the Exmouth Community Liaison Group meeting and provided an update on the proposed activity.
- On 16 February 2023, Woodside emailed the Exmouth Community Liaison Group advising of the proposed activity (Appendix F, reference 2.25) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to the Exmouth Community Liaison Group advising of the proposed activity (Appendix F, reference 2.25.1) 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

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 11.8).	No additional measures or controls are required.

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Onslow Chamber of Commerce and Industry (CCI)		
<p>Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Onslow Chamber of Commerce and Industry for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the BHP website in March 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 addressed and responded to Onslow Chamber of Commerce and Industry over a 9 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. However, they 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. 		
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>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.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside notes that no concerns or questions 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 11.8).</p>	<p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on the Onslow Chamber of Commerce and Industry's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
Carnarvon Chamber of Commerce and Industry		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Carnarvon Chamber of Commerce and Industry for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Carnarvon Chamber of Commerce and Industry on 16 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided the Carnarvon Chamber of Commerce and Industry with the opportunity to provide feedback over a 10 month period.

Summary of information provided and record of consultation:

- On 16 February 2023, Woodside emailed Carnarvon Chamber of Commerce and Industry advising of the proposed activity (Appendix F, reference 2.7) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to Carnarvon Chamber of Commerce and Industry advising of the proposed activity (Appendix F, reference 2.7.1) 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
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 11.8).	No additional measures or controls are required.

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Karratha Community Liaison Group (KCLG)

- WA Police
- Karratha Health Care
- Development WA
- Ngarluma Yindjibarndi Foundation Ltd (NYFL)*
- Department of Education
- Pilbara Ports Authority
- Regional Development Australia
- Pilbara Development Commission
- Dampier Community Association
- City of Karratha
- Karratha & Districts Chamber of Commerce and Industry
- Horizon Power
- Murujuga Aboriginal Corporation (MAC)*
- Department of Local Government, Sport and Cultural Industries

**NYFL and MAC were consulted directly as described above.*

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with the KCLG for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Karratha Community Liaison Group on 17 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to Karratha Community Liaison Group over a 10 month period.

Summary of information provided and record of consultation:

- On 17 February 2023, Woodside emailed Karratha Community Liaison Group advising of the proposed activity (Appendix F, reference 2.49) and provided a Consultation Information Sheet.
- On 8 March 2023, Woodside sent a reminder email to Karratha Community Liaison Group advising of the proposed activity (Appendix F, reference 2.49.1) and provided a Consultation Information Sheet.
- On 29 June 2023, Woodside presented to the Karratha Community Liaison Group on previous and upcoming EP consultation (Appendix F, reference 2.64).
 - Woodside acknowledged and discussed the increased volume of consultation material the Community Liaison Group (CLG) members had been receiving and explained the changes requiring consultation based on EMBA. A member of the CLG asked how they can opt out of consultation for Woodside’s Environment Plans.
 - Woodside presented a slide which listed Environment Plans on which the CLG members had recently been consulted and potential Environment Plans they may be consulted on throughout the remainder of 2023.
 - Woodside confirmed it had a Senior Environment Adviser available to discuss any of the Environment Plans in detail after the meeting. No CLG members met with the Adviser and no feedback was received with specific reference to Woodside’s Environment Plans.
- On 29 September 2023, Woodside presented to the Karratha CLG on Woodside activities, including a status update on this EP. No feedback was received related to this EP. (Appendix F, reference 2.69)

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 11.8).	No additional measures or controls are required.

Other non-government groups or organisations

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Friends of the Earth Australia

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Friends of the Earth Australia for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 11 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 20 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. 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 advised that decommissioned infrastructure such as the DTM when removed from the field would be transported for onshore recycling or reuse opportunities. Woodside also advised its focus on establishing local content opportunities for onshore recycling.
 - 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 which are unrelated to this EP, 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.

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<ul style="list-style-type: none"> 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 its views on dredging to minimise turbidity and working with Traditional Custodians to be guided on their views. its interest is in marine life, social justice and Indigenous issues and welcomed a further meeting to discuss proposed decommissioning activities. 	<p>Woodside has addressed Friends of the Earth’s feedback, including:</p> <ul style="list-style-type: none"> advising that decommissioned infrastructure such as the DTM when removed from the field 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. 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 about 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 11.8).</p>	<p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on Friends of the Earth’s functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
<p>Maritime Union of Australia (MUA)</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Maritime Union of Australia (MUA) for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 10 month period.

Summary of information provided and record of consultation:

- On 21 February 2023, Woodside emailed the Maritime Union of Australia advising of the proposed activity (Appendix F, reference 2.32) and provided a Consultation Information Sheet.
- On 10 March 2023, Woodside sent a reminder email to the Maritime Union of Australia advising of the proposed activity (Appendix F, reference 2.32.1) and provided a Consultation Information Sheet.
- On 15 March 2023, the Maritime Union of Australia emailed thanking Woodside for the opportunity to comment on the Griffin and Stybarrow Decommissioning EPs. The Maritime Union of Australia advised it had no comments to make on the projects.
- On 15 March 2023, Woodside responded thanking the Maritime Union of Australia for their response.

The summary above demonstrates that consultation for the purpose of 11A(1) 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 Woodside and MUA exchanged emails to arrange an alternative meeting time.
- On 18 July 2023, MUA emailed Woodside requesting further information and a meeting regarding Griffin and 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 .

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- 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 4 August 2023, Woodside met with the MUA to answer questions in relation to the decommissioning EPs where equipment was left in-situ. The meeting was 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>The MUA advised it had no comments to make with respect to the proposed activities.</p> <p>MUA have requested a meeting to discuss equipment left in situ that is unrelated to this EP.</p>	<p>Woodside notes the MUA's advice that it has no comments to make with respect to the proposed activities.</p> <p>Woodside met with the MUA to discuss in situ activities unrelated to this EP.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).</p>	<p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on MUA's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
<p>Greenpeace Australia Pacific (GAP)</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with GAP for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 GAP on 14 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Greenpeace with the opportunity to provide feedback over a 10 month period.

Summary of information provided and record of consultation:

- On 2 June 2023, Woodside emailed GAP advising of the proposed activity and provided a Consultation Information Sheet (Appendix 2.52).
- On 23 June 2023, Woodside sent a reminder email to GAP advising of the proposed activity (Appendix F, reference 2.52.1) 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
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 11.8).	No additional measures or controls are required.

Research institutes and local conservation groups or organisations

Cape Conservation Group (CCG)

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Cape Conservation Group for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 CCG on 17 February 2023 based on their function, interest and activities.
- Woodside has addressed and responded to CCG over a 10 month period.

Summary of information provided and record of consultation:

- On 11 March 2022, Woodside emailed CCG advising of the proposed activity (Appendix F, Reference 1.2).
- On 13 March 2022, CCG responded by email asking Woodside when the full EP would be available for review as providing comments on this would be preferable to a summary. CCG also asked for confirmation that:
 - The DTM is the same piece of equipment previously referred to as the ‘spider buoy’ in previous EPs,
 - When stakeholders were notified about the unexpected nature of its sinking.
- On 22 March 2022, Woodside emailed CCG explaining that the full EP was not available for review as it had not yet been submitted to NOPSEMA but offered a briefing session to talk through details of the activities proposed to be managed under this EP. Woodside further:
 - Requested a date and time for a virtual meeting and items for discussion with Woodside’s Decommissioning Project team.
 - Confirmed the DTM is the same piece of equipment previously referred to as the “spider buoy”.
 - Confirmed that while it was not able to provide a specific date on advice when stakeholders were advised that the DTM sinking, it could confirm the DTM location on the seabed was mentioned in the Stybarrow cessation EP accepted by NOPSEMA in April 2017.
- On 27 May 2022, Woodside emailed CCG advising of the proposed activity (Appendix F, reference 1.32.23)
- On 17 February 2023, Woodside emailed the CCG advising of the proposed activity (Appendix F, reference 2.26) and provided a Consultation Information Sheet.
- On 23 February 2023, CCG emailed Woodside seeking additional information on:
 - The unblocking of the Stybarrow H4 flowline and details release of crude oil to the marine environment.
 - The tow route and location of the shallow water lifting area.
- On 1 March 2023, Woodside emailed the Cape Conservation Group and:
 - confirmed it was investigating feasibility options to unblock the H4 flowline, which was blocked by sand and hydrate, using coil tubing.

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- Woodside advised this approach would allow the hydrate and sand to be recovered to a construction vessel and the flexible flowline to be recovered onto a reel for transport to shore, without the oil being released.
 - Should this approach be determined not to be feasible due to potential safety risk, or if it is unsuccessful during activity execution, Woodside advised it proposed to cut and recover the line, releasing the contents of the blocked flowline at the seabed.
 - As the H4 flowline is at >800 m water depth, a release at the seabed minimises environmental impact as hydrates are stable at seabed conditions. Woodside advised it anticipated impacts to be localised and negligible.
- On 10 March 2023 Woodside emailed CCG advising of changes to the proposed activity scope and provided an updated Consultation Information Sheet (Appendix F, reference 2.26.1).
- On 14 March 2023, CCG responded to Woodside advising:
 - there is heightened potential of damage to the marine environment and wildlife during Woodside decommissioning activities including but not limited to:
 - Higher risk to reef and island habitats from spills
 - Increased potential negative impacts on migrating whales from marine noise
 - Higher possibility for contamination of inshore areas and reef habitat by chemicals used in the process of growth removal as a result of persistent and reckless delays in maintenance and disposal.
 - CCG submits that:
 - 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.
 - the use of CSV working in shallow waters increases 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 to CCG advising:
 - all decommissioning activities will be undertaken in accordance with relevant accepted EPs under NOPSEMA's jurisdiction.
 - unplanned loss of containment events have been identified as part of the EP risk assessment process (presented in Section 8 of the EP) and appropriate controls are adopted to prevent a hydrocarbon spill, as well as controls to respond in the highly unlikely event of a hydrocarbon spill.
 - noise emissions from a range of sources have been assessed. Noise from vessel activities has the potential to exceed thresholds at the source. However, as marine fauna is transient in the Operational Area, individuals are expected to potentially show localised avoidance based on behavioural avoidance responses.

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- marine growth and scale from subsea infrastructure may be removed using water jetting and blasting to expose lifting points or gain visualisation. Removed material is expected to disperse with prevailing currents or sink to the bottom. An acidification agent may be added to jetting water in a highly targeted process, involving water and chemicals involved around <1 m3.
- planned discharges include routine and non-routine discharges associated with the general operations of project vessels and as previously communicated, feasibility options are being investigated to unblock the H4 flowline as referenced above. The focus is to recover the flowline to construction vessel without fuel being released.
- Its commitment to completing decommissioning and all regulatory requirements stipulated by the regulator through general directions.

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>CCG responded to Woodside seeking additional information on:</p> <ul style="list-style-type: none"> • The unblocking of the Stybarrow H4 flowline and details release of crude oil to the marine environment. • The tow route and location of the shallow water lifting area. <p>CCG advised there is a heightened risk to the marine environment during decommissioning activities from the potential for spills, marine noise and contamination of inshore areas and reef habitat by chemicals used in the decommissioning. CCG also advised the use of CSV in the shallow water increases risk.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside responded and:</p> <ul style="list-style-type: none"> • confirmed it was investigating feasibility options to unblock the H4 flowline, which was blocked by sand and hydrate, using coil tubing. • advised this approach would allow the hydrate and sand to be recovered to a construction vessel and the flexible flowline to be recovered onto a reel for transport to shore, without the oil being released. • advised it anticipated impacts to be localised and negligible. • All current and proposed field management and decommissioning activities will be undertaken in accordance with relevant accepted EPs under NOPSEMA's regulatory jurisdiction. • Noise emissions from a range of sources have been assessed. Noise from vessel activities has the potential to exceed thresholds at the source, however as marine fauna is transient in the Operational Area, individuals are expected to potentially show localised avoidance based on behavioural avoidance responses. • 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. • Woodside has progressed further planning for the Stybarrow DTM and is no longer planning to tow the structures to the shallow water locations for lifting operations. Therefore, there is not expected to be any credible impacts to the shallow water environments. <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 11.8).</p>	<p>Woodside has consulted CCG in the course of preparing this EP. Woodside has assessed the claims and 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 proposed activities on CCG's functions, interests or activities.</p>
<p>Protect Ningaloo</p>		

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Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Protect Ningaloo for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 Protect Ningaloo on 17 February 2023 based on their function, interest and activities.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Protect Ningaloo with the opportunity to provide feedback over a 10 month period.

Summary of information provided and record of consultation:

- On 17 February 2023, Woodside emailed Protect Ningaloo advising of the proposed activity (Appendix F, reference 2.27) 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 2.27.1) 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
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 11.8).	No additional measures or controls are required.

Australian Institute of Marine Science (AIMS)

Woodside has discharged its obligations for consultation under Regulation 11A(1) and consultation with Protect Ningaloo for the purpose of 11A(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet was publicly available on the BHP website in March 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 10 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 2.48) 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 2.48.1) 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 where their 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 5km 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 for Stybarrow 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 March 2023 that it will be undertaking offshore vessel and coring operations in this region out to 500 m depth, over the next 12 months.</p> <p>AIMS requested maintaining communications to minimise the risk of respective activity overlap and 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 activities within the proximity of the Stybarrow field, including providing updated spatial data</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 11.8).</p>	<p>Although consultation for the purpose of Reg 11A is complete, Woodside will continue to engage AIMS through ongoing engagement and will send updated spatial data for infrastructure, once available and before commencement of activities (Section 11.9 and 11.10.2.1 of the EP).</p> <p>Woodside considers the measures and controls in the EP are appropriate.</p>

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Table 2: Engagement Report with Persons or Organisations Assessed as Not Relevant

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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 11 March 2022, Woodside emailed ASBTIA advising of the proposed activity (Appendix F, Reference 1.14). On 1 June 2023, Woodside emailed ASBTIA advising of the proposed activity (Appendix F, reference 2.51) 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 2.51.1) 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
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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
Pearl Producers Association (PPA)		

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Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 11 March 2022, Woodside emailed PPA advising of the proposed activity (Appendix F, Reference 1.7). On 25 March 2022, PPA responded and advised Woodside that contact details had changed for engagement with PPA. On 8 April 2022, Woodside responded acknowledging the change in contact details. On 16 February 2023, Woodside emailed the PPA advising of the proposed activity (Appendix F, reference 2.2) and provided a Consultation Information Sheet. On 11 March 2023, Woodside sent a reminder email to PPA advising of the proposed activity (Appendix F, reference 2.2.1) 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
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 11.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.7.2 of this EP.</p> <p>Woodside will provide notifications to AFMA, DAFF – Fisheries, CFA, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area (Western Deepwater Trawl Fishery) prior to the commencement and at the end of the activity, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
Other non-government groups or organisations		
Australian Conservation Foundation (ACF)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 16 February 2023, Woodside emailed ACF 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 ACF advising of the proposed activity (Appendix F, reference 2.12.1) 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.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 11.8).	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 2.11) 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 2.11.1) 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
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 11.8).	No additional measures or controls are required.
Research institutes and local conservation groups or organisations		
University of Western Australia (UWA)		
Summary of information provided and record of consultation: <ul style="list-style-type: none"> On 21 February 2023, Woodside UWA 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 the UWA advising of the proposed activity (Appendix F, reference 2.30.1) 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
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 11.8).	No additional measures or controls are required.

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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 2.31) 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 2.31.1) 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
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 11.8).	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 2.50) 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 2.50.1) 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
CSIRO responded with an automated email acknowledging receipt of the email. Whilst feedback has been received, there were no objections or claims.	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 11.8).	No additional measures or controls are required.

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Initial Consultation (11 March 2022)

1.1 Consultation Information Sheet sent to relevant persons

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Petroleum

Invitation for Feedback: Stakeholder Information Fact Sheet



Stybarrow Equipment Removal Environment Plan Northern Carnarvon Basin, North West Australia

The Stybarrow field 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 to 2015 and consisted of the Stybarrow floating production, storage and offloading (FPSO) facility and its mooring; subsea facilities including ten 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 the first approvals being sought for the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities will be managed under the Stybarrow Equipment Removal Environment Plan (EP). The well plug and abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

Since 2015, 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 in August 2015

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, BHP removed all buoyancy modules from the risers to eliminate the risk of floating equipment coming to the sea surface.

BHP is now planning for the safe removal of remaining equipment from the Stybarrow field. Details on the equipment removal activities are provided below in the Description of the Activity section.

This Stakeholder Fact Sheet relates to the submission of the Environment Plan (EP) for the proposed petroleum activities in WA-32-L supporting equipment removal activities for the Stybarrow facilities.

The activity is 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.

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.

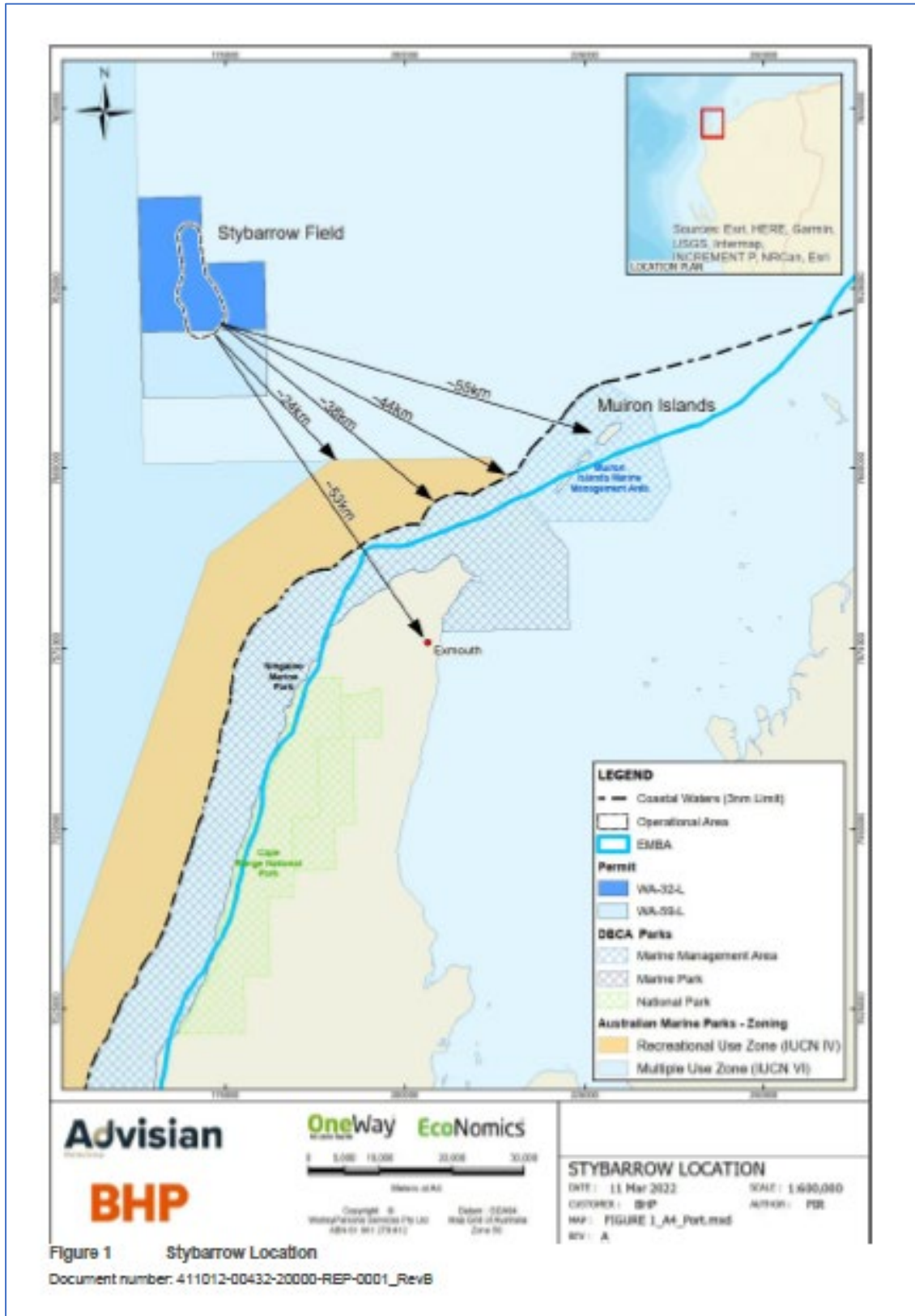
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Location of Operational Area

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
Mulron Islands Marine Management Area (Western Australia)	45 km

Description of Activity

Within the scope of the equipment removal EP, BHP proposes to:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.
- Remove wellheads and associated infrastructure within Production Licence WA-32-L.
- Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery.

Equipment will only be removed after the P&A of the wells, which is subject to a future approval.

The equipment to be removed is summarised in Table 2. Locations of the equipment are provided in Table 3.

Upon removal, BHP proposes to dispose of equipment onshore in accordance with applicable requirements. BHP will assess options to reduce waste through re-use or recycling of recovered equipment.

One flowline which is planned to be retrieved was blocked due to a sanding event during production. BHP has assessed 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 the removal activity, the nine DTM mooring anchors, nine riser base anchors and the suction pile foundation for the water injection manifold will remain in the Stybarrow field. These large steel items are securely embedded in the seabed and their removal will result in substantial disturbance to the environment. BHP is considering leaving these items *in situ* and will submit a future EP to NOPSEMA which seeks to leave these items in place. BHP will undertake further consultation to support this future EP.

A detailed inventory of subsea infrastructure to be removed under this scope will be included in the EP, which will be available on NOPSEMA's website (<https://www.nopsema.gov.au>) upon submission.

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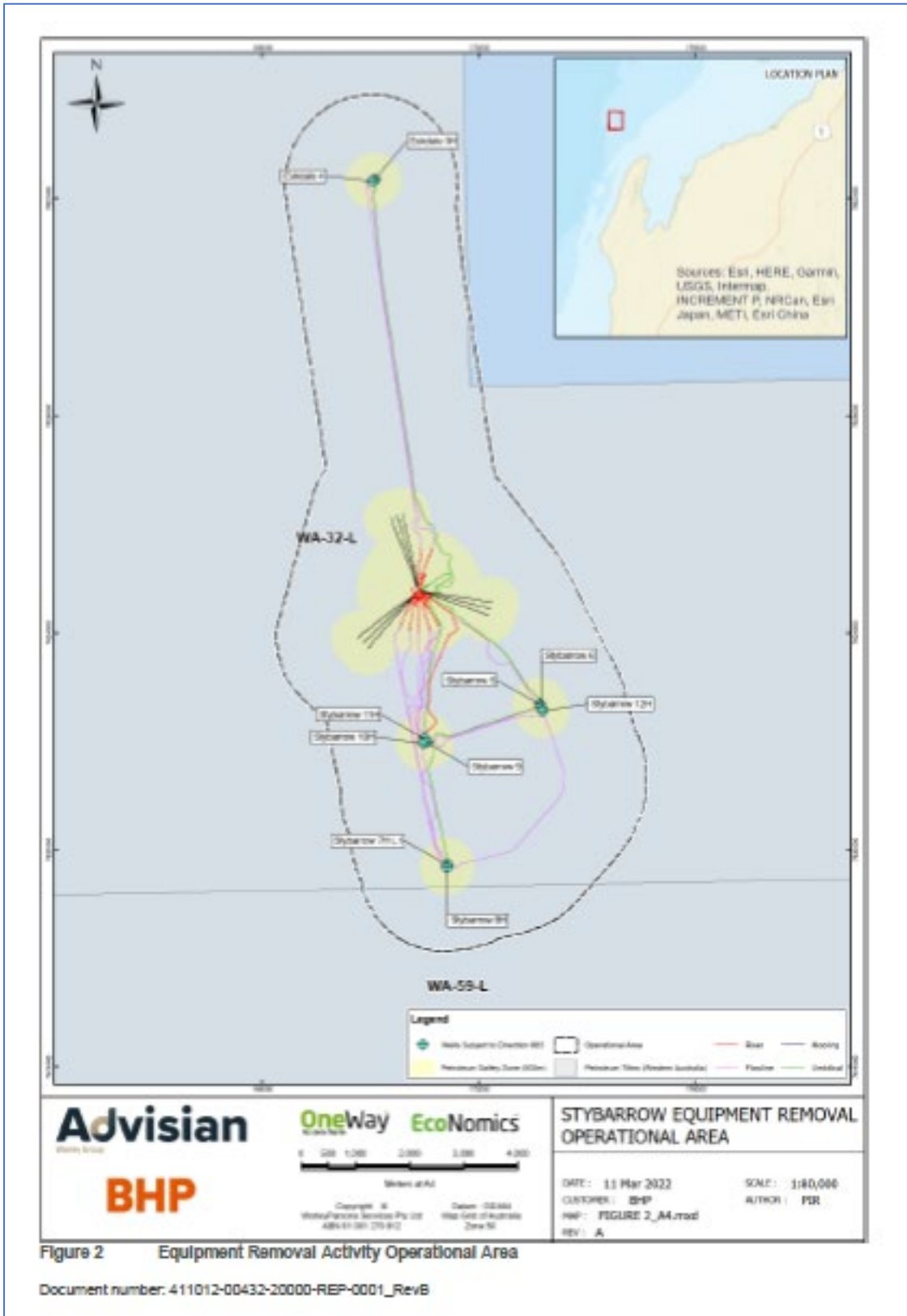


Figure 2 Equipment Removal Activity Operational Area

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Table 2 Summary of decommissioning activities

Stybarrow Subsea Infrastructure Decommissioning Activities	
Earliest expected commencement date	Earliest start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
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 and mooring anchors 1,134 m radius around former FPSO location
Estimated duration	Approximately 6 months
Water depth	Approximately 810-850 m
Equipment to be removed	1 x DTM 9 x DTM mooring legs 9 x Mooring support buoys 9 x Flexible risers 8 x Flexible production flowlines 4 x Gas Injection / lift flowlines 2 x Water Injection flowlines All flying leads, umbilicals, and jumpers 1 x Water Injection manifold 7 x Subsea distribution units (SDU) / umbilical termination assemblies (UTAs) 15 x Anode skids 10 x Xmas trees and wellheads
Vessels	Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities. General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.

Table 3 Location of subsea infrastructure and removal activity. All coordinates in MGA50/GDA94

Subsea Infrastructure	Easting	Northing	Activity
DTM buoy	170873.2	7624770.8	Remove
DTM mooring legs – chain and wire	Between anchors and DTM buoy		Remove
Mooring 1 Anchor	172172.4	7624323.5	Embedded in seabed - leave in situ proposed, subject to a future EP
Mooring 2 Anchor	172215.2	7624441.7	
Mooring 3 Anchor	172237.1	7624561.1	
Mooring 4 Anchor	170594.8	7626195	
Mooring 5 Anchor	170489.2	7626161.1	
Mooring 6 Anchor	170372.9	7626127.5	
Mooring 7 Anchor	169759.4	7623909.3	

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Subsea Infrastructure	Easting	Northing	Activity
Mooring 8 Anchor	169828.7	7623775.8	
Mooring 9 Anchor	169943.1	7623715.9	
Mooring support buoys	With mooring legs		Remove
Flexible risers	Between DTM buoy and flowlines		Remove
Dynamic Umbilical Riser Base	171433.8	7625113.9	Clamps and chains removed. Riser bases embedded in seabed – leave in situ proposed, subject to a future EP
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	
Flexible production flowlines	Between risers and drill centres		
Gas Injection / lift flowlines			Remove
Water Injection flowlines			Remove
Umbilicals			Remove
Jumpers	Within drill centres		Remove
Water Injection manifold (suction anchor)	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	171441.3	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	173119.00	7622683.90	Remove
Stybarrow-5 (I-2) Well	173143.86	7622636.19	Remove
Stybarrow-12 (H-5) Well	173172.80	7622560.74	Remove
Stybarrow-9 (I-1) Well	171032.33	7621985.59	Remove
Stybarrow-10 (H-3) Well	170958.06	7621964.06	Remove
Stybarrow-11 (H-4) Well	170980.53	7622056.34	Remove
Stybarrow-7 (H-2) Well	171413.34	7619728.58	Remove
Stybarrow-8 (H-1) Well	171403.11	7619659.88	Remove
Eskdale-3 (EH1) Well	170065.05	7632345.32	Remove
Eskdale-4 (EG1) Well	170024.53	7632318.26	Remove

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Summary of potential risks and associated management measures

Potential risks and management measures associated with the activity have been considered and are summarized 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, and details of exclusion zones prior to commencement of the activity.
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"> 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.
Seabed disturbance	<ul style="list-style-type: none"> Minimise disturbance where possible noting that physical removal of subsea infrastructure may have measurable but limited impacts to the environment, where recovery of ecosystem function is expected within <1 year.
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.
Waste generation	<ul style="list-style-type: none"> Waste generated aboard the support vessels will be managed in accordance with legislative requirements and a Waste Management Plan. Wastes will be managed and disposed of in a safe and environmentally responsible manner that prevents accidental loss to the marine environment. Wastes transported onshore will be sent to appropriate recycling or disposal facilities by a licenced waste contractor.
Unplanned Risks	
Hydrocarbon release-marine diesel	<ul style="list-style-type: none"> Comply with the AMSA-approved Shipboard Oil Pollution Emergency Plan (SOPEP), including maintaining spill kits, emergency response procedures and conducting spill response exercises. Implementation of Oil Pollution Emergency Plan (OPEP). No heavy fuels used – only marine diesel oil (MDO).
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). Environmental awareness induction for all marine crew. Maintain caution and 'no approach' zones from cetaceans. Report any injury/mortality of EPBC-listed fauna to the Department of Agriculture, Water and the Environment.

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Potential Risks	Management and/or mitigation measures
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.
Minor spills of chemicals or hydraulic fluid	<ul style="list-style-type: none"> Project vessels have an approved SOPEP (as appropriate to vessel class) in accordance with Marine Order 91 (marine pollution prevention – oil) Chemical use will be managed in accordance with BHP and contractor chemical selection and approval procedures. Critical hoses outside banded areas (such as ROVs) are inspected and maintained as part of PMS.
Loss of solid hazardous or non-hazardous wastes (including dropped objects)	<ul style="list-style-type: none"> Recovery of solid wastes lost overboard where safe and practicable to do so.

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 2000. 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.

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

BHP believes in putting health and safety first, being environmentally responsible and supporting our communities.

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1.2 Email sent to Cape Conservation Group (CCG) (11 March 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:

- 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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> ▪ Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. ▪ Remove wellheads and associated infrastructure within Production Licence WA-32-L. ▪ Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
Petroleum title:	Production Licence WA-32-L

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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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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 8 April 2022.

Regards,

BHP

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1.3 Email to Department of Biodiversity, Conservation and Attractions (DBCA) (11 March 2022)

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.

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.

1

- The Stybarrow Venture FPSO was disconnected from the DTM and departed from the field in August 2015.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> • Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. • Remove wellheads and associated infrastructure within Production Licence WA-32-L. • Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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 8 April 2022.

Regards,

BHP

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Revision: 2

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1.4 Email to Department of Defence (DoD) (11 March 2022)

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> • Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. • Remove wellheads and associated infrastructure within Production Licence WA-32-L. • Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and a anchor handling tugs. Typically, two (but

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	up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities. General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.
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 8 April 2022.

Regards,

BHP

1.5 Email to Department of Mines, Industry Regulation and Safety (DMIRS) (11 March 2022)

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.

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.

	<ul style="list-style-type: none"> Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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 8 April 2022.

Regards,

BHP

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1.6 Email to Department of Transport (DoT) (11 March 2022)

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.

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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 8 April 2022.

Regards,

BHP

1.7 Email to Pearl Producers Association (PPA) (11 March 2022)

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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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none">• Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.• Remove wellheads and associated infrastructure within Production Licence WA-32-L.• Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery.
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	Equipment will only be removed after the P&A of the wells, which is subject to a future approval.
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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:

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- 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 8 April 2022.

Regards,

BHP

1.8 Email to Western Australian Fishing Industry Council (WAFIC) (11 March 2022)

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

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Activities:	<ul style="list-style-type: none"> Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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:

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- 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 8 April 2022.

Regards,

BHP

1.9 Email to WA Game Fishing Association (WAGFA) (11 March 2022)

Dear WA Game Fishing 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.

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

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BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>

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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 8 April 2022.

Regards,

BHP

1.10 Email to Exmouth Recreational Marine Users (11 March 2022)

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

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Activities:	<ul style="list-style-type: none"> Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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 8 April 2022.

Regards,

BHP

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1.10.1 Email to Exmouth Game Fishing Club (11 March 2022)

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.

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none">• Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.• Remove wellheads and associated infrastructure within Production Licence WA-32-L.• Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
Petroleum title:	Production Licence WA-32-L

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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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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 8 April 2022.

Regards,

BHP

1.11 Email to Tuna Australia (11 March 2022)

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.
- Remove wellheads and associated infrastructure within Production Licence WA-32-L.

	<ul style="list-style-type: none"> • Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. Equipment will only be removed after the P&A of the wells, which is subject to a future approval.
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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 8 April 2022.

Regards,

BHP

1.12 Email to Marine Tourism WA (11 March 2022)

Dear Marine Tourism WA

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.
- Remove wellheads and associated infrastructure within Production Licence WA-32-L.

	<ul style="list-style-type: none"> Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. Equipment will only be removed after the P&A of the wells, which is subject to a future approval.
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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 8 April 2022.

Regards,

BHP

1.13 Email to Commonwealth Fisheries Association (CFA) (11 March 2022)

Dear Commonwealth Fisheries 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.

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.
- Remove wellheads and associated infrastructure within Production Licence WA-32-L.

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	<ul style="list-style-type: none"> Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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.

- 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 8 April 2022.

Regards,

BHP

1.14 Email to Australian Southern Bluefin Tuna Industry Association (ASBTIA) (11 March 2022)

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Revision: 2

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Uncontrolled when printed. Refer to electronic version for most up to date information.

Dear ASBTIA

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> • Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. • Remove wellheads and associated infrastructure within Production Licence WA-32-L. • Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
Petroleum title:	Production Licence WA-32-L
Activity location:	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
Estimate start date:	Earliest start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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:

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- 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 8 April 2022.

Regards,

BHP

1.15 Email to Australian Energy Producers (AEP) (Formerly APPEA) (11 March 2022)

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Revision: 2

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Uncontrolled when printed. Refer to electronic version for most up to date information.

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:

- 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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.
- Remove wellheads and associated infrastructure within Production Licence WA-32-L.
- Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery.

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	Equipment will only be removed after the P&A of the wells, which is subject to a future approval.
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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 8 April 2022.

Regards,

BHP

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1.16 Email to Western Deepwater Trawl Fishery (11 March 2022)

Dear Licence Holders in the Western Deepwater Trawl Fishery

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.
- Remove wellheads and associated infrastructure within Production Licence WA-32-L.
- Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery.

Equipment will only be removed after the P&A of the wells, which is subject to a future approval.

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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities. General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.
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

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- 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 8 April 2022.

Regards,

BHP

1.17 Email to Department of Primary Industries and Regional Development (DPIRD) (11 March 2022)

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).
- 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.

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The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>

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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 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 8 April 2022.

Regards,

BHP

1.18 Email to Director of National Parks (DNP) (11 March 2022)

Dear DNP

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

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Activities:	<ul style="list-style-type: none"> Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. Equipment will only be removed after the P&A of the wells, which is subject to a future approval.
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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 8 April 2022.

Regards,

BHP

1.19 Email to Department of Industry, Science and Resources (DISR) (formerly DISER) (11 March 2022)

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.
- Remove wellheads and associated infrastructure within Production Licence WA-32-L.

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	<ul style="list-style-type: none"> Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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 8 April 2022.

Regards,
BHP

1.20 Email to Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries (formerly DAWE) (11 March 2022)

Dear DAWE

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.

	<ul style="list-style-type: none"> Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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

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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 8 April 2022.

Regards,

BHP

1.21 Email to Australian Maritime Safety Authority (AMSA) - Marine Safety (11 March 2022)

Dear AMSA

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> • Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. • Remove wellheads and associated infrastructure within Production Licence WA-32-L. • Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
Petroleum title:	Production Licence WA-32-L

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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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities. General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.
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 8 April 2022.

Regards,

BHP

1.22 Email to Australian Maritime Safety Authority (AMSA) - Marine Pollution (11 March 2022)



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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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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> • Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. • Remove wellheads and associated infrastructure within Production Licence WA-32-L. • Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.

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Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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 8 April 2022.

Regards,

BHP

1.23 Email to Australian Hydrographic Office (AHO) (11 March 2022)

Dear 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).

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- 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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> • Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. • Remove wellheads and associated infrastructure within Production Licence WA-32-L. • Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general</p>

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	support vessel will be performing field management in the Operational Area at any time.
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 8 April 2022.

Regards,

BHP

1.24 Email to Australian Fisheries Management Authority (AFMA) (11 March 2022)

Dear AFMA

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

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The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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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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 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 8 April 2022.

Regards,

BHP

1.25 Email to Australian Border Force (ABF) (11 March 2022)

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:

- Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.

	<ul style="list-style-type: none"> Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. Equipment will only be removed after the P&A of the wells, which is subject to a future approval.
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities. General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.
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

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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 8 April 2022.

Regards,

BHP

1.26 Email to Western Australian Fishing Industry Council (WAFIC) (7 April 2022)

Dear WAFIC

BHP is sending this reminder email on planned decommissioning activities for the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia, as the proposed cutoff date for feedback is 8 April 2022.

We have similarly sent reminder emails/letters to licence holders in Commonwealth and State-managed fisheries that are relevant to the proposed activities.

A copy of the fact sheet for this activity is attached for reference and please let us know if you need additional time for response.

Regards,

BHP

1.27 Email to Director of National Parks (DNP) (8 April 2022)

Dear DNP

BHP is sending this reminder email on planned decommissioning activities for the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia, as the proposed cutoff date for feedback is 8 April 2022.

We have send this email given the proximity of proposed activities to Australian Marine Parks.

A copy of the fact sheet for this activity is attached for reference and please let us know if you need additional time for response.

Regards,

BHP

1.28 Presentation to Exmouth Community Liaison Group (21 September 2022)



INTRODUCTION

Disclaimer, important notes and assumptions

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Forward-looking statements are not guarantees of future performance and are subject to inherent known and unknown risks, uncertainties, assumptions and other factors, many of which are beyond the control of Woodside, its related bodies corporate and their respective Beneficiaries. Details of the key risks relating to Woodside and its business can be found in the "Risk" section of Woodside's most recent Annual Report released to the Australian Securities Exchange and in Woodside's filings with the U.S. Securities and Exchange Commission. You should review and have regard to these risks when considering the information contained in this presentation.

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Other important information

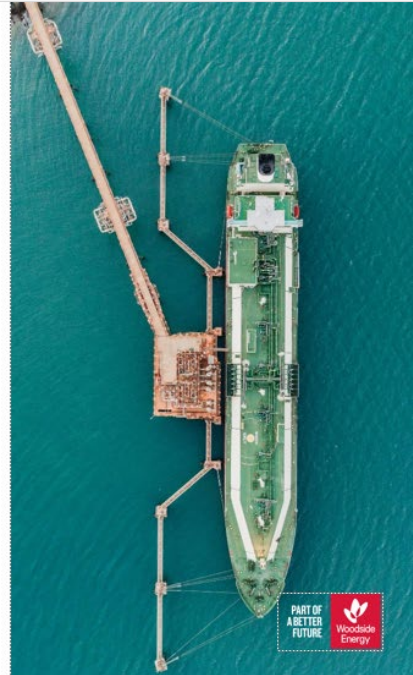
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EXMOUTH COMMUNITY REFERENCE GROUP
AGENDA

- Operations update
- Activity update
- Environment Plans
- Community partnerships

3 |



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

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

Plug & Abandonment (Cth)

- Submitted for assessment August 2022
- Proposal to plug and abandon 10 Stybarrow wells

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1.29 Email to Exmouth Community Liaison Group (ECLG) including NCWHAC (28 March 2022)

Dear Exmouth Community Reference 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:

- 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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of all equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none"> • Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. • Remove wellheads and associated infrastructure within Production Licence WA-32-L. • Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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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Estimate start date:	Earliest start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	<p>Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities.</p> <p>General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.</p>
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 8 April 2022.

Regards,

BHP

1.30 Email to DBCA (8 April 2022)



BHP is sending this reminder email on planned decommissioning activities for the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia, as the proposed cutoff date for feedback is 8 April 2022.

We have sent this reminder email given the proximity of proposed activities to the Ningaloo Australian Marine Park.

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A copy of the fact sheet for this activity is attached for reference and please let us know if you need additional time for response.

Regards,

BHP

1.31 Letter to licence holders – Mackerel Managed Fishery, West Coast Deep Sea Crustacean Managed Fishery (11 March 2022)

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11 March 2022

BHP Petroleum Pty Ltd
125 St Georges Terrace
Perth WA 6000 Australia
GPO Box J888
Perth WA 6842 Australia
Tel +61 8 6321 1000
bhp.com

Dear Licence holder,

Re: Stakeholder Consultation – Stybarrow Equipment Removal Environment Plan

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.

The DTM unexpectedly sank to the seabed in mid-2016, and currently lies in approximately 825 m water depth. Following the DTM sinking, all buoyancy modules were removed from the risers to eliminate buoyant risk.

BHP is now planning for the progressive decommissioning of the Stybarrow Field under relevant Commonwealth approvals.

The first approvals being sought will be the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP) and includes the removal of equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

A summary of proposed activities to be managed under the Stybarrow Equipment Removal Environment Plan (EP) follows:

Activity Overview

Activities:	<ul style="list-style-type: none">• Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L.• Remove wellheads and associated infrastructure within Production Licence WA-32-L.• Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery.
--------------------	--

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	Equipment will only be removed after the P&A of the wells, which is subject to a future approval.
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 start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities. General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.
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:

- 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.

BHP has endeavored to consolidate provision of consultation information to individual licence holders where possible. However, we acknowledge there may be times where information is duplicated where fishers hold licences across multiple fisheries.

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).

Feedback is sought on the NOPSEMA EP by close of business on **8 April 2022**.

Regards,

BHP

**1.31.1 Letter to licence holders - Mackerel Managed Fishery, West Coast Deep Sea
Crustacean Managed Fishery (7 April 2022)**

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BHP Petroleum Pty Ltd
 125 St Georges Terrace
 Perth, WA, 6000 Australia
 GPO Box J868
 Perth, WA, 6842 Australia
 Tel +61 8 6321 1000
 bhp.com

7 April 2022

Dear Licence holder,

Re: Stakeholder Consultation – Stybarrow Equipment Removal Environment Plan

BHP is sending this reminder letter to you as your interests are relevant to BHP's next phase of planning for the ongoing safe and sustainable closure of the Stybarrow Field in Commonwealth waters, approximately 53 km north-west of Exmouth, Western Australia.

BHP is seeking your feedback on proposed activities, summarised below and provided in more detail in the enclosed fact sheet. Information previously provided to you had sought feedback by 8 April 2022. BHP will accept feedback beyond this date should you want to comment.

Production from the Stybarrow Field commenced in 2007 and ceased in 2015, with decommissioning of the Stybarrow Field to be undertaken in stages under relevant Commonwealth approvals.

The first approvals being sought are to manage the removal of the subsea equipment and ongoing field management activities until the equipment is removed. These activities are proposed to be managed under the Stybarrow Equipment Removal Environment Plan (EP), and includes the removal of equipment containing plastics (DTM and flexible flowlines).

The Well Plug and Abandonment (P&A) and equipment proposed to remain in situ will be subject to separate future environmental approvals.

Activity Overview

Activities:	<ul style="list-style-type: none"> Remove subsea infrastructure within the Stybarrow field in Production Licence WA-32-L. Remove wellheads and associated infrastructure within Production Licence WA-32-L. Continue field management scopes on the subsea infrastructure, which comprise of inspection, maintenance, monitoring, and repair (IMMR) and remotely operated vehicle (ROV) surveys on the subsea infrastructure, as required, to ensure equipment remains in a condition that does not preclude full recovery. <p>Equipment will only be removed after the P&A of the wells, which is subject to a future approval.</p>
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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Estimate start date:	Earliest start is 2024 calendar year, subject to approvals, vessel availability, and weather constraints.
Approximate duration:	Approximately 6 months
Vessels:	Offshore support vessels are planned to be used to remove subsea infrastructure, such as general support/supply vessels, diving support vessels/installation vessels and anchor handling tugs. Typically, two (but up to six) project vessels will be in the Operational Area during subsea infrastructure removal activities. General support vessels will be used to transport equipment to and from the Operational Area. Typically, only one general support vessel will be performing field management in the Operational Area at any time.
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.

BHP has endeavored to consolidate provision of consultation information to individual licence holders where possible. However, we acknowledge there may be times where information is duplicated where fishers hold licences across multiple fisheries.

Please provide comment as soon as practicable. Comments can be made by email, letter or by phone (refer to enclosed fact sheet for contact details).

Regards,

BHP

1.32 Consultation Information (May 2022)

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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.

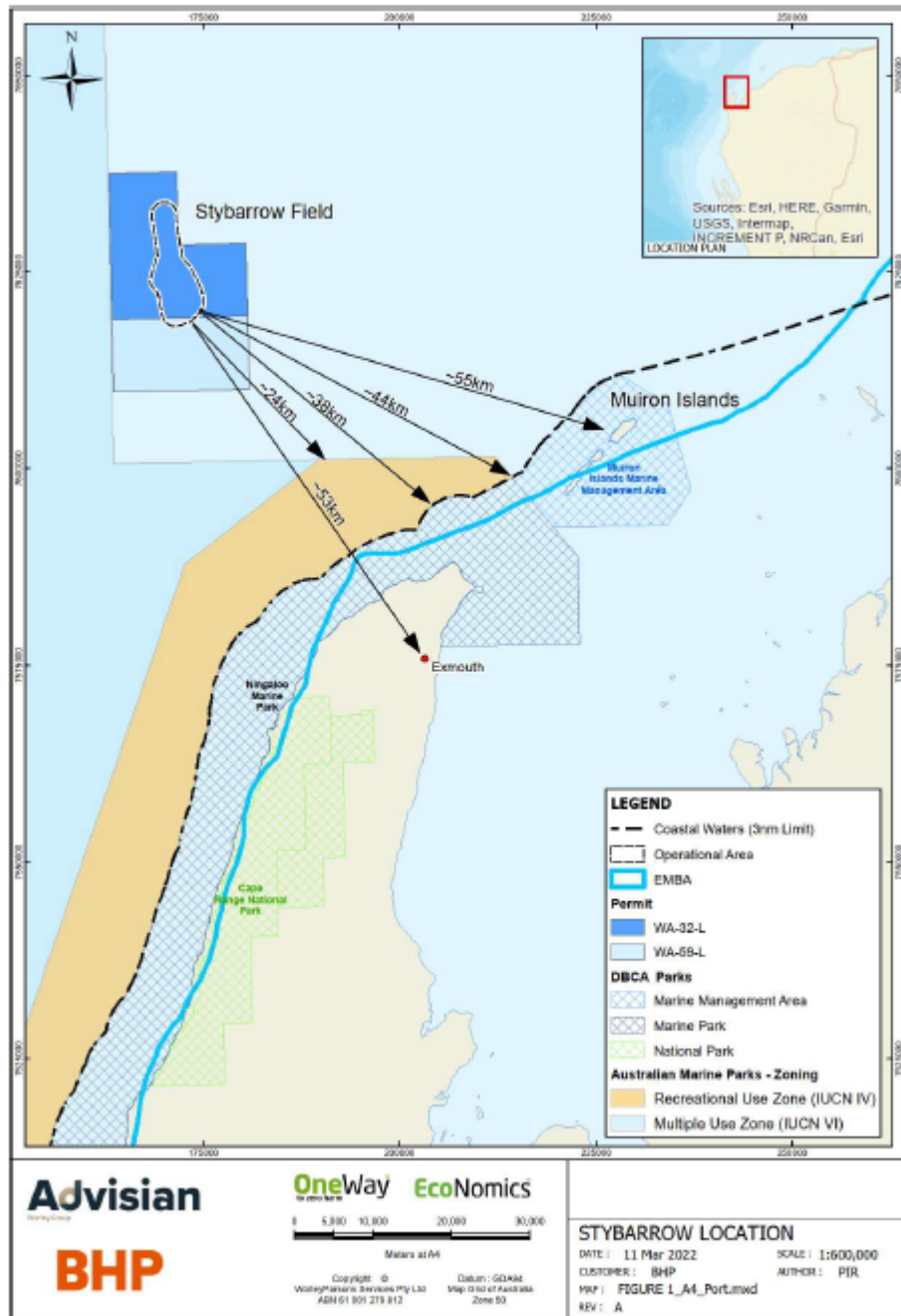
The well P&A and H4 flowline removal activities are planned to commence in 2024, pending approvals, vessel availability and weather constraints. BHP is preparing an EP for this activity for submission to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the 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 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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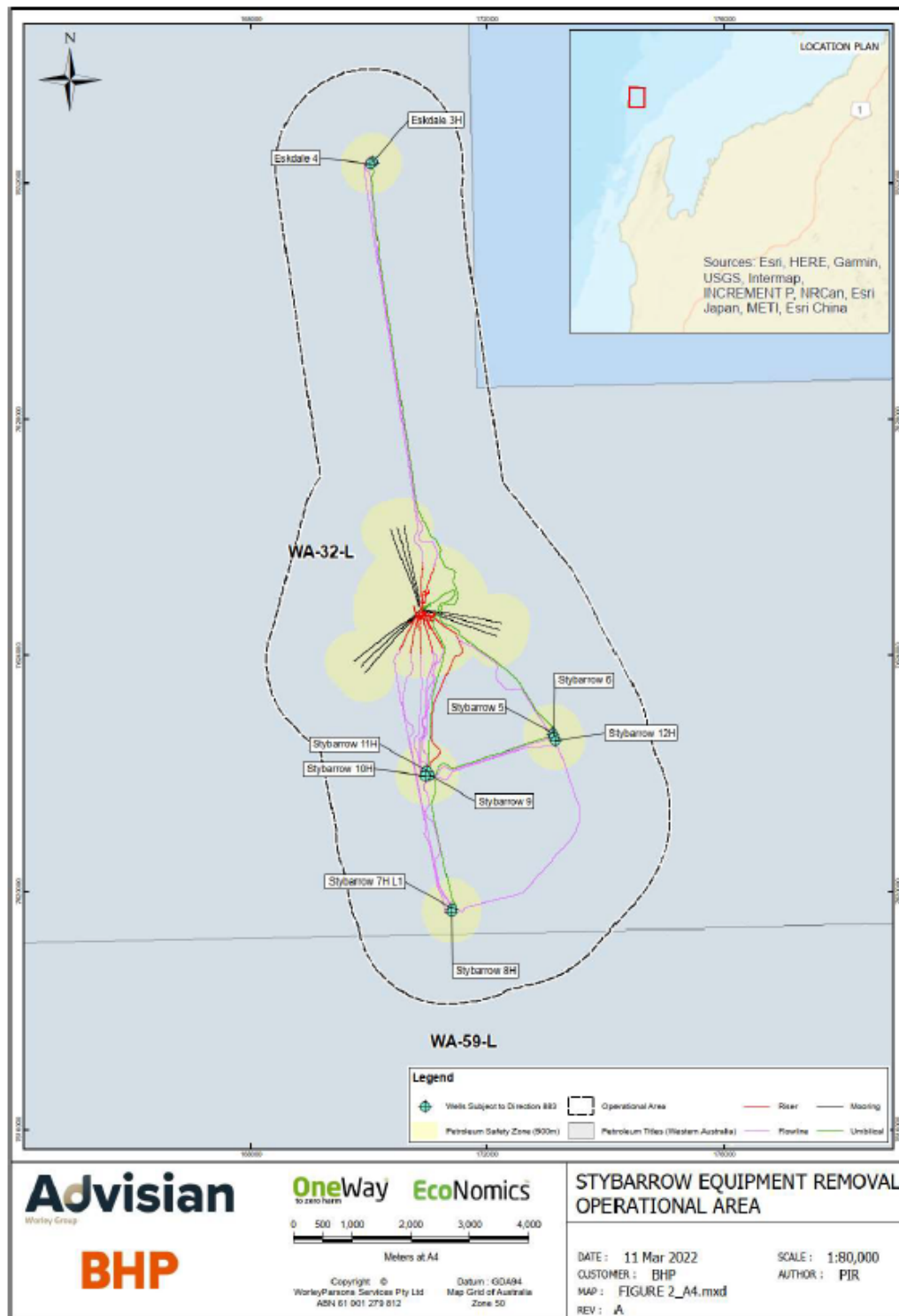


Figure 2 Equipment Removal Activity Operational Area

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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-scraps macerated prior to discharge. Maintain biosecurity requirements such as anti-fouling certification, ballast water and biofouling controls.

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Access

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.

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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.

1.32.1 Email sent to Australian Hydrographic Office (AHO) and Australian Maritime Safety Authority (AMSA) – Marine Safety (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 6:13 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

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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

1.32.2 Email sent to Australian Fisheries Management Authority (AFMA) (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 6:12 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.

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- 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

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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

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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

1.32.3 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.

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- 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

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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

1.32.4 Email sent to Department of Biodiversity, Conservation and Attractions (DBCA) (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 6:29 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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- 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.

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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

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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

1.32.5 Email sent to Department of Mines, Industry Regulation and Safety (DMIRS) (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 6:30 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.

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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- 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.

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- 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

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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

1.32.6 Email sent to Department of Transport (DoT) (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 6:41 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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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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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

1.32.7 Email sent to Western Australian Fishing Industry Council (WAFIC) (27 May 2022)

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From: BHP PET External Affairs <bhppetexternalaffairs@bhp.com>
Sent: Friday, 27 May 2022 3:02 PM
To: [REDACTED]
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 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

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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.
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

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

1.32.8 Email sent to Exmouth Recreational Marine Users (27 May 2022)

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Revision: 2

Page 318 of 681

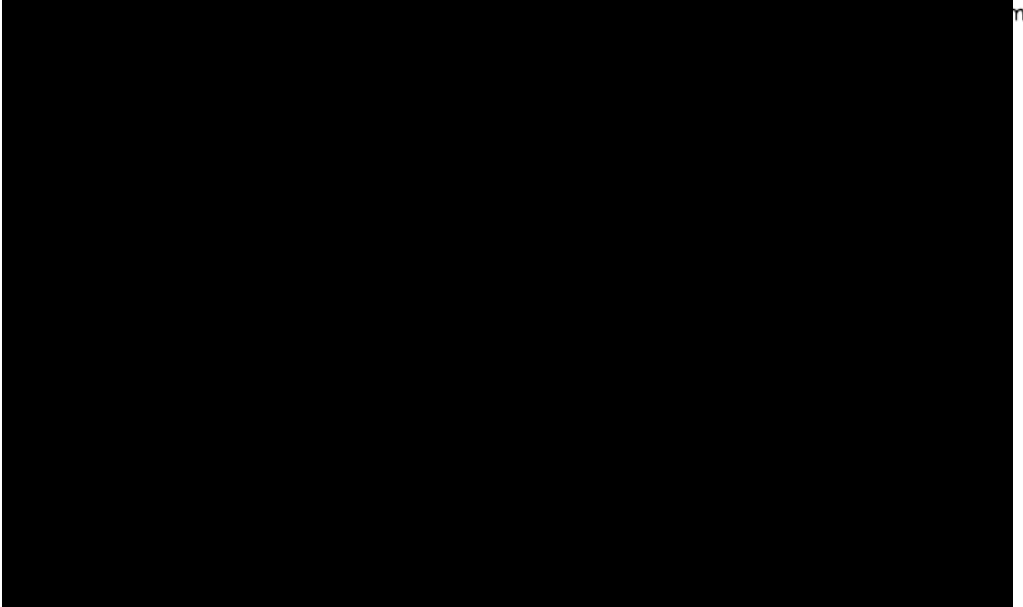
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INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@petroleumdeepwater.com>

Fri 5/27/2022 7:26 AM

Cc: BHP PET External Affairs <bhppetexternalaffairs@petroleumdeepwater.com>



📎 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

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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
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

1.32.8.1 Email sent to Exmouth Game Fishing Club (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 7:29 AM

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.

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

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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

1.32.9 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

Activities:	<ul style="list-style-type: none"> • The P&A of 10 production/injection wells
Stybarrow P&A EP	<ul style="list-style-type: none"> • Removal of the H4 flexible production flowline
Stybarrow Field Deviation EP	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

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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

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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

1.32.10 Email sent to Department of Defence (DoD) (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:23 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

<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

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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

1.32.11 Email sent to Department of Primary Industries and Reginal Development (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 6:39 AM

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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- 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

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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

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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

**1.32.12 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 <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

s://outlook.office.com/mail/bhppetexternalaffairs@petroleumdeepwater.com/AAMkADg3MzRhZDk4LWFYITtINDIwNC05ZDU3LTEwMDM1ZWNmN... 1/2

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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

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Regards,

BHP

1.32.13 Email sent to Recfishwest (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 7:04 AM

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.

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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

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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

1.32.14 Email sent to Marine Tourism WA (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 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.

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Activity Overview

<p>Activities:</p> <ul style="list-style-type: none"> 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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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

1.32.15 Email sent to APPEA (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 6:57 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.

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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/AAMkADg3MzRhZDk4LWFYITtINDIwNC05ZDU3LTEwMDM1ZWNm...> 1/2

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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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Regards,

BHP

1.32.16 Email to Western Deepwater Trawl Fishery (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 6:55 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.

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- 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.

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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

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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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Commercial Fishing Overview

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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

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Regards,

BHP

1.32.17 Email sent to Australian Border Force (27 May 2022)

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.

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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.
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Activity location:	Approximately 53 km north-west of Exmouth, Western Australia
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Approximate water depth:	Approximately 810-850 m

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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

1.32.18 Email sent to Commonwealth Fisheries Association (CFA) (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 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.

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

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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

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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

1.32.19 Email sent to Ningaloo Coast World Heritage Advisory Committee (NCWHAC) (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 6:43 AM

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:

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- 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

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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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Regards,

BHP

1.32.20 Email sent to Shire of Exmouth (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 8:27 AM

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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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
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Approximate water depth:	Approximately 810-850 m

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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

1.32.21 Email sent to Exmouth Community Liaison Group (27 May 2022)

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📎 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:

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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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Revision: 2

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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
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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Regards,

BHP

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1.32.22 Email sent to WA Game Fishing Association (27 May 2022)

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

Fri 5/27/2022 7:07 AM

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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<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
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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

1.32.23 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.

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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
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)

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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

1.32.24 Email sent to Australian Maritime Safety Authority – Marine Pollution (27 May 2022)

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8/20/23, 3:40 PM

Mail - BHP PET External Affairs - Outlook

INVITATION FOR FEEDBACK | Stybarrow P&A and Decommissioning Environment Plans

BHP PET External Affairs <bhppetexternalaffairs@bhp.com>



Cc:BHP PET External Affairs <bhppetexternalaffairs@bhp.com>

1 attachments (691 KB)

Fact Sheet - Stybarrow P&A and Decommissioning Environment Plans.pdf;

Dear Mick

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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

2. Activity Update (February 2023)

2.1 Activity Update - Information Sheet – Stybarrow Decommissioning Environment Plans (16 February 2023)

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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.

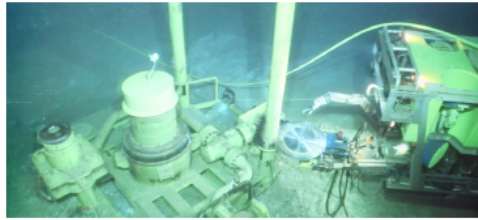
Removal activities: The Operational Area includes the area encompassing an approximate 1,500 m radius around the subsea infrastructure and wellheads. It is intended that a temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during removal 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.

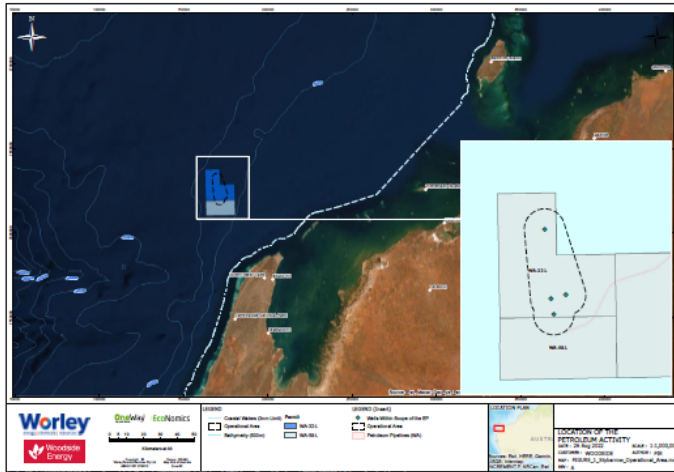


Figure 1. Stybarrow Location Map



Typical subsea equipment recovery activity

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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

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<p>Infrastructure</p>	<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>
<p>Vessels</p>	<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>	<p>N/A</p>
<p>Distance to nearest marine park/mature reserve</p>	<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>			

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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
Mooring Anchor 2	172215.2	7624441.7	Anchors are 11 tonne Stevpris Mk5 Vryhoi drag anchors, -6m x 6m x 3m, constructed from mild steel
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 MBAs for this EP, reflecting the activities and the different locations that the activity could occur.

Each of the MBAs 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.

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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.

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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.

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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.

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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 relevant persons (16 February 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
- Recfishwest
- Western Australian 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
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Summary:

Removal Activities

- 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.

In Situ Activities

- 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.

Plugging and Abandonment (P&A) Activities

- 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.

Removal Activities

- 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).

In Situ Activities

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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,

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		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

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		<p>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).

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Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the 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.

2.2.1 Email sent to the following relevant persons (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*
- *Western Australian 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

2.3 Email sent to North West Slope Trawl Fishery (4 licence holders), Western Deepwater Trawl Fishery (5 licence holders) and Western Tuna and Billfish Fishery (4 licence holders) (17 February 2023)

Dear Licence Holder

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:

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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 	<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

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	for the PLEM and 4 distribution skids.	(equipment monitoring and inspection). In Situ Activities <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:	Removal Activities <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. 	Plugging and Abandonment (P&A) Activities <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. Removal Activities <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.

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		<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

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		<p>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).

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).

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- 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.

2.3.1 Email sent to North West Slope Trawl Fishery (4 licence holders), Western Deepwater Trawl Fishery (5 licence holders) and Western Tuna and Billfish Fishery (4 licence holders) (10 March 2023)

Dear Licence Holder

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).

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- 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

2.4 Email sent to titleholders (17 February 2023)

- *BP Australia*
- *Carnarvon Energy*
- *Chevron*
- *ENI*
- *Finder Energy*
- *JX Nippon*
- *KUFPEC*
- *ExxonMobil*
- *Santos*
- *Sapura OMV*
- *TGS*
- *Western Gas*

Dear Titleholder

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

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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. <p>Removal Activities</p> <ul style="list-style-type: none"> • Removal of subsea equipment (wellheads, trees, manifolds, risers, flexible flowlines, and umbilicals).

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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. 	<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"> • 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>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:	Removal Activities	Plugging and Abandonment (P&A) Activities

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	<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. 	<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

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		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

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		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).

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.

2.4.1 Email sent to titleholders (10 March 2023)

- BP Australia
- Carnarvon Energy
- Chevron

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- *ENI*
- *Finder Energy*
- *JX Nippon*
- *KUFPEC*
- *ExxonMobil*
- *Santos*
- *Sapura OMV*
- *TGS*
- *Western Gas*

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).

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

2.5 Email sent to the Shire of Carnarvon (16 February 2023)

Dear Shire of Carnarvon

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Revision: 2

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Uncontrolled when printed. Refer to electronic version for most up to date information.

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 wells to

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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>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.
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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>

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		<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.

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		<ul style="list-style-type: none"> • 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.

2.5.1 Email sent to Shire of Carnarvon (10 March 2023)

Dear Shire of Carnarvon

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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

2.6 Email sent to the Town of Port Hedland (16 February 2023)

For the Attention of the CEO, Town of Port Hedland

Dear Town of Port Hedland

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 	<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>

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	<p>neighbouring 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 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> • Earliest P&A start is estimated to be Q4 2023,

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	<p>approvals, vessel 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>subject to 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 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area

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	<p>includes the area encompassing an 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>encompassing an approximate 3,000 m radius 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 	<p>P&A activities</p> <ul style="list-style-type: none"> • Semi-Submersible Mobile Offshore Drilling Unit (MODU)

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	<p>pipeline removal activities.</p> <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.

2.6.1 Email sent to Town of Port Hedland (10 March 2023)

Dear Town of Port Hedland

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.

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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

2.7 Email sent to the Carnarvon Chamber of Commerce and Industry (16 February 2023)

Dear Carnarvon Chamber of Commerce and Industry

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). • Ongoing field management activities. • Pigging and subsequent removal of the 26 km of Griffin Gas Export Pipeline (GEP) 	<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

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	<p>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>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.</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.

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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 	<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

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	<p>removal and potential tow activities.</p>	<p>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

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		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.

2.7.1 Email sent to Carnarvon Chamber of Commerce and Industry (10 March 2023)

Dear Carnarvon Chamber of Commerce and Industry

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

2.8 Email sent to the Port Hedland Chamber of Commerce and Industry (16 February 2023)

Dear Port Hedland Chamber of Commerce and Industry

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 	<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

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	for the PLEM and 4 distribution skids.	(equipment monitoring and inspection). In Situ Activities <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:	Removal Activities <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. 	Plugging and Abandonment (P&A) Activities <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. Removal Activities <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.

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		<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

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		<p>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.

2.8.1 Email sent to Port Hedland Chamber of Commerce and Industry (10 March 2023)

Dear Port Hedland Chamber of Commerce and Industry

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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2.9 Email sent to Exmouth (52 licence holders) and Karratha (9 licence holders) recreational marine users (17 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:

	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
Summary:	Removal Activities <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, 	Plugging and Abandonment (P&A) Activities <ul style="list-style-type: none"> Pre-execution activities associated with the well P&A, such as barrier

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	<p>distribution skids, risers, 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>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
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	<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>monitoring and inspection).</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 	<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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	<p>be completed no later than 31 December 2024, pursuant to General Direction 832.</p>	<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:	Removal Activities	P&A Activities

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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 equipment.• A temporary 500 m exclusion zone will apply around the project vessels during removal and potential tow 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 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
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		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**.

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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.

Woodside Feedback

2.9.1 Email set to Exmouth (52 licence holders) and Karratha recreational marine users (9 licence holders) (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

2.9.2 Email sent to King Bay Game Fishing Club (15 March 2023)

Dear King Bay Fishing Club

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

- 2.10 Letter sent to Marine Aquarium Managed Fishery (12 licence holders), Mackerel Managed Fishery (Area 2 and 3) (34 licence holders), West Coast Deep Sea Crustacean managed Fishery (7 licence holders), Onslow Prawn Managed Fishery (30 licence holders), Exmouth Gulf Prawn Managed Fishery (15 licence holders), Gascoyne Demersal Scalefish Fishery (53 licence holders), West Coast Demersal Scalefish Fishery (48 licence holders), West Coast Rock Lobster Fishery (721 licence holders), Pilbara Line Fishery (8 licence holders), Pilbara Trap Fishery (6 licence holders) and Pilbara Trawl Fishery (6 licence holders), (8 March 2023)**



Please direct all responses/queries to:
Woodside Feedback
T: 1800 442 977
E: feedback@woodside.com

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Pty Ltd
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Perth WA 6000
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T +61 8 9348 4000
www.woodside.com

08 March 2023

Attn: [Stakeholder]
[Company]
[Address]

Dear Stakeholder

Woodside previously consulted you (correspondence dated 17 February 2023) on Woodside's proposed activities for the decommissioning of 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.

The below QR codes link to our Consultation Information Sheets for the proposed activities, which provide a summary of potential key risks and associated management measures. Should the information be easier for you to access, the Information Sheets are also available on our [website](#).

**Activity Update: Griffin
Decommissioning EP**



**Activity Update:
Stybarrow
Decommissioning EP**



**Activity Update:
Stybarrow Plug &
Abandonment EP**



We would appreciate any feedback you may have by 17 March 2023 to support the development of our proposed environment plans.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

Kind regards,

Woodside Feedback



Woodside Energy
Mia Yellagonga
Karlak, 11 Mount Street
Perth WA 6000
Australia

T: 1800 442 977
E: feedback@woodside.com.au
www.woodside.com
f t in v i

2.11 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](#).

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 	<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.

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	<p>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. 	<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
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		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 	<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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	<p>anticipated to take approximately 2 months to complete.</p>	<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

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		<p>vessels during removal activities.</p> <ul style="list-style-type: none"> • 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.

2.11.1 Email sent to CCWA (10 March 2023)

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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.

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

2.12 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.

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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. 	<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.

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<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

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		<p>approximately 1 month to complete.</p>
<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

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		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.

2.12.1 Email sent to Australian Conservation Foundation (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.

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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

2.13 Email sent to the 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.

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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. 	<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

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	<ul style="list-style-type: none"> Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>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 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m

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	<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>radius 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. 	<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.

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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.	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).
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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.

2.13.1 Email sent to 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:

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- 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

2.14 Email sent to the Western Australian Fishing Industry Council (WAFIC) (16 February 2023)



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. 	<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).

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	<ul style="list-style-type: none"> 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 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 	<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.

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	<p>than 31 December 2024, pursuant to General Direction 832.</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.
<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 	<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

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	<p>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>the four drill centres 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. 	<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.

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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. 	<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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**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
- 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

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.

2.14.1 Email sent to WAFIC (10 March 2023)



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

2.15 Email sent to the Australian Maritime Safety Authority (AMSA) and Australian Hydrographic Office (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.

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](#).

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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) 	<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

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	<p>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>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.</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.

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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 	<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

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	<p>removal and potential tow activities.</p>	<p>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

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		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.

2.15.1 Email sent to AMSA – Marine Safety and AHO (15 March 2023)

Dear AMSA and AHO

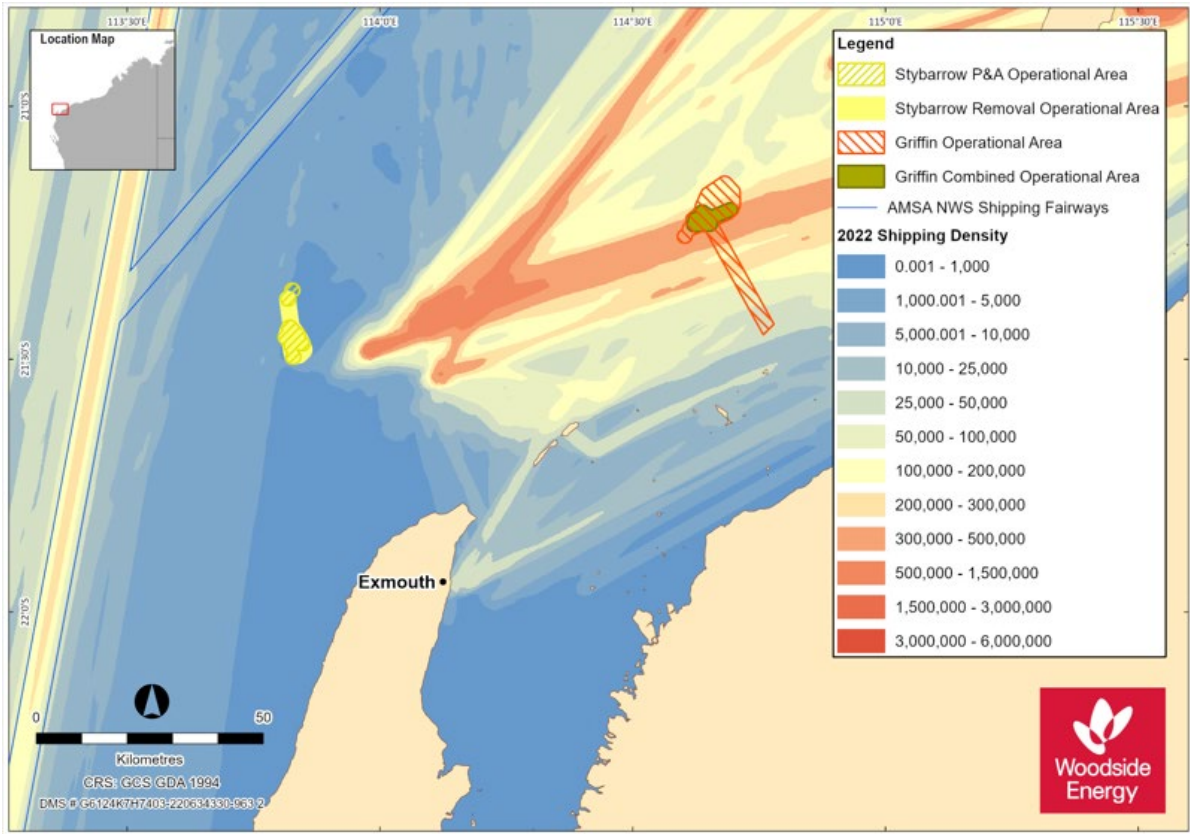
Woodside previously consulted you (email below) on its plans for the progressive decommissioning of the Griffin and Stybarrow fields, previously operated by BHP Petroleum Pty Ltd (BHP).

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 are also been attached for reference.

Please let us know should you have any feedback relating to the proposed activities by 17 March 2023.

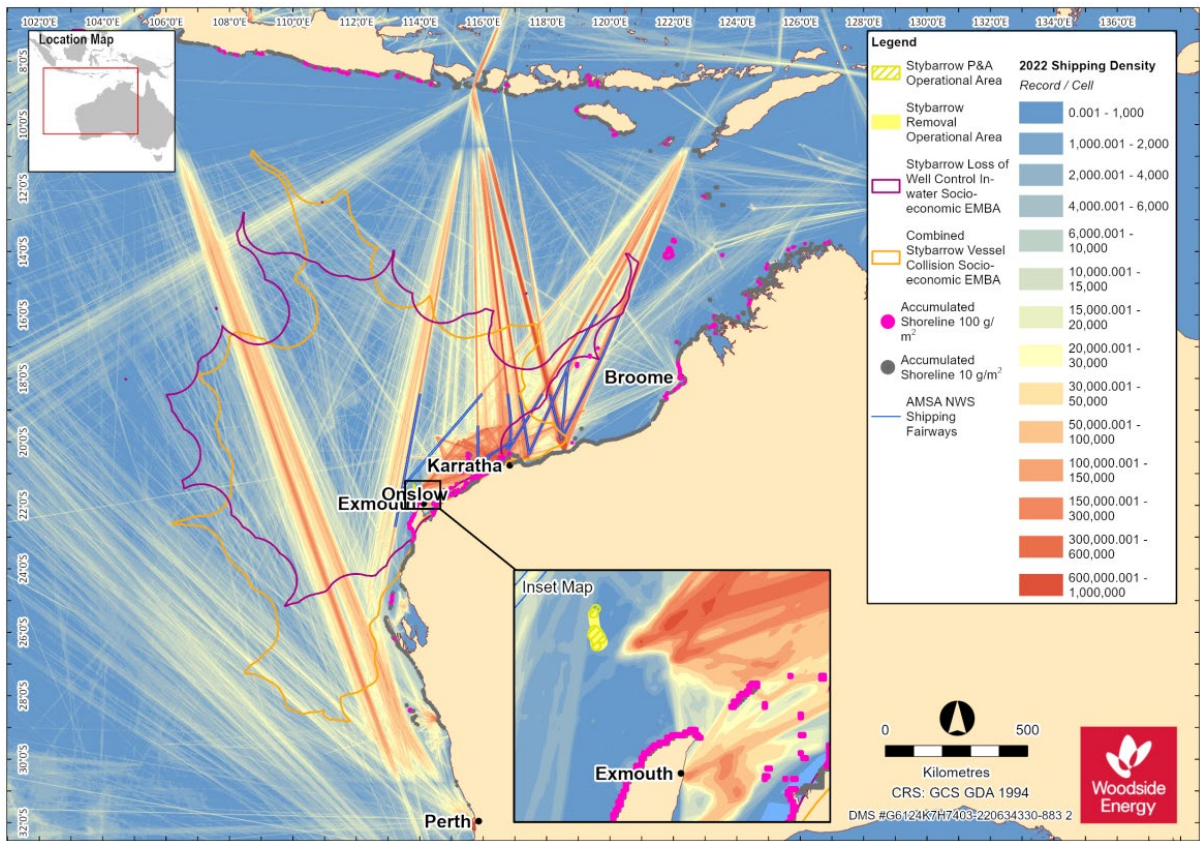
Regards
Woodside Feedback

Attached Image 1 – Griffin and Stybarrow – Shipping lanes – Operational Areas



Attached Image 2 – Shipping channels - Stybarrow

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2.16 Email sent to the Department of Defence (DoD) (16 February 2023)

Dear Department of Defence

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

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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 	<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).

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	<p>the 26 km of Griffin Gas Export Pipeline (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. 	<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 	<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.

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	<p>than 31 December 2024, pursuant to General Direction 832.</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.
<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 	<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

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	<p>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>the four drill centres 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. 	<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.

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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.	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).
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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.

2.16.1 Email sent to the DoD (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

Woodside Feedback

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2.17 Email sent to the Commonwealth Fisheries Association (CFA) (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 	<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.

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	<p>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. 	<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
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		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 	<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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	<p>anticipated to take approximately 2 months to complete.</p>	<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

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		<p>vessels during removal activities.</p> <ul style="list-style-type: none"> • 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:

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.

2.17.1 Email sent to CFA (10 March 2023)



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

2.18 Email sent to Tuna Australia (16 February 2023)



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:	Removal Activities <ul style="list-style-type: none"> Removal of subsea equipment (wellheads, trees, distribution skids, 	Plugging and Abandonment (P&A) Activities

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	<p>risers, 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. 	<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
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		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.

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<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

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		<p>safety zone which will continue to 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).

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.

2.18.1 Email sent to Tuna Australia (10 March 2023)



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

2.19 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:

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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 	<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

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	for the PLEM and 4 distribution skids.	(equipment monitoring and inspection). In Situ Activities <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:	Removal Activities <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. 	Plugging and Abandonment (P&A) Activities <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. Removal Activities <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.

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		<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

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		<p>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).

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).

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- 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.

2.19.1 Email sent to AFMA (10 March 2023)

Dear AFMA

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.

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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

2.20 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 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) 	<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

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	<p>within Commonwealth waters.</p> <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>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.</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 <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.
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 	<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

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	<p>removal and potential tow activities.</p>	<p>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

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		shallower water location (if required).
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State-managed fisheries implications:

We note there are 20 overlapping State managed fisheries (listed below) in the Environments that May Be Affected (EMBA)s 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

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:

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If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to 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**.

2.20.1 Email sent to DPIRD (10 March 2023)

Dear Mark

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

2.21 Email sent to the Department of Climate Change, Energy, the Environment and Water (DCCEE) and the Department of Agriculture, Fisheries and Forestry (DAFF) (16 February 2023)

Dear DCCEE 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](#).

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)). 	<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.

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	<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. 	<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
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		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 	<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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	<p>anticipated to take approximately 2 months to complete.</p>	<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

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		<p>vessels during removal activities.</p> <ul style="list-style-type: none"> • 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,

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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.
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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.

2.21.1 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

2.22 Email sent to the Department of Planning, Lands and Heritage (DPLH) and WA Museum (16 February 2023)

Dear DPLH and WA Museum

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:	<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,

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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>trees, manifolds, risers, 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 	<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

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	<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>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 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m

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	<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>radius 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. 	<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.

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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.	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).
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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.

2.23 Email sent to the 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 of potential key risks and associated management measures. The Information Sheets are also available on our [website](#).

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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.

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		<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 	<p>Plugging and Abandonment (P&A) Activities</p>

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	<p>complete and GEP removal activities are anticipated to take approximately 2 months to complete.</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

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		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).

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

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:

Stybarrow Field Management and Decommissioning EP	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
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	<p>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

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- Montebello
- Shark Bay
- Ningaloo

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.

2.23.1 Email sent to DNP (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
Woodside Feedback

2.24 Email sent to the Department of Biodiversity, Conservation and Attractions (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:

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	Griffin Field Decommissioning Activities	Stybarrow Field Decommissioning Activities
<p>Summary:</p>	<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

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		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

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		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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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.

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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**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.24.1 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.

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

2.25 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)). 	<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

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	<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>cement plugs in the 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
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		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.

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<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.

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		<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.

2.25.1 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

2.26 Email sent to the Cape Conservation Group (CCG) (17 February 2023)

Dear Denise,

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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.

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 wells to permanently

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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>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
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		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 	<p>Plugging and Abandonment (P&A) Activities</p>

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	<p>take approximately 6 months to complete and GEP removal activities are anticipated to take approximately 2 months to complete.</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

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		<p>will continue to 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).

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Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the 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.

2.26.1 Email sent to CCG (10 March 2023)



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

2.27 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).

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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.

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 	<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>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
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		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 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take

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	<p>complete and GEP removal activities are anticipated to take approximately 2 months to complete.</p>	<p>approximately 6 – 9 months.</p> <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

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		<p>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**.

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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.

2.27.1 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

2.28 Email sent to the Shire of Exmouth (17 February 2023)



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 	<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

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	<p>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>subsea tree assembly.</p> <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
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		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 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take

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	<p>removal activities are anticipated to take approximately 2 months to complete.</p>	<p>approximately 6 – 9 months.</p> <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

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		<p>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**.

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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.

2.28.1 Email sent to the Shire of Exmouth (10 March 2023)



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

2.29 Email sent to the Shire of Ashburton (17 February 2023)



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 	<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

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	<p>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>subsea tree assembly.</p> <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
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		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 	<p>Plugging and Abandonment (P&A) Activities</p> <ul style="list-style-type: none"> P&A activities are anticipated to take

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	<p>removal activities are anticipated to take approximately 2 months to complete.</p>	<p>approximately 6 – 9 months.</p> <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

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		<p>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**.

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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.

2.30 Email sent to the University of Western Australia (UWA) (21 February 2023)



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
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Summary:

Removal Activities

- 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.

In Situ Activities

- 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.

Plugging and Abandonment (P&A) Activities

- 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.

Removal Activities

- 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).

In Situ Activities

- 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

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		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.

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<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 	<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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	towing of the RTM to sheltered water.	<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.

2.30.1 Email sent to UWA (10 March 2023)

Dear Jo

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

2.31 Email sent to the Western Australian Marine Science Institution (WAMSI) (21 February 2023)

[REDACTED]

[REDACTED] 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:	<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).

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		<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 	<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>

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	<p>approximately 2 months to complete.</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>	<p>P&A activities</p>

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	<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.	<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).
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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.

2.31.1 Email sent to WAMSI (10 March 2023)



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

2.32 Email sent to the Maritime Union of Australia (MUA) (21 February 2023)



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). • 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 	<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

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	<p>foundations for the PLEM and 4 distribution skids.</p>	<p>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.

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<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.

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		<ul style="list-style-type: none"> 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).

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.

2.32.1 Email sent to MUA (10 March 2023)



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

Woodside Feedback

2.33 Letter sent to the following relevant State Fishery licence holders (17 February 2023)

- *Exmouth Gulf Prawn (15 licence holders)*
- *Gascoyne Demersal Scalefish (53 licence holders)*
- *Mackerel (52 licence holders)*
- *Marine Aquarium (12 licence holders)*
- *Onslow Prawn (30 licence holders)*
- *Pilbara Line (8 licence holders)*
- *Pilbara Trap (6 licence holders)*
- *Pilbara Trawl (12 licence holders)*
- *West Coast Deep Sea Crustacean (7 licence holders)*
- *West Coast Demersal Scalefish (48 licence holders)*
- *West Coast Rock Lobster Managed Fishery (727 licence holders)*

17 February 2023



051 - 3

2 Allen-williams Parade
WINTHROP WA 6150

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.

Please see the relevant QR codes below which link directly to consultation Information Sheets which provide additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our website www.woodside.com. You can also subscribe to receive updates on our consultation activities by subscribing through our Consultation Activities page.

Activity Update: Griffin
Decommissioning EP



Activity Update: Stybarrow
Decommissioning EP



Activity Update: Stybarrow
Plug & Abandonment EP



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 Authority (NOPSEMA). Please let us know if you would like to update previous feedback or have any additional views by 17 March 2023.

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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.

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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 	<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

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	project vessels during removal and potential tow activities.	<p>MODU and the associated 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.
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 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

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- 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

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:

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**.

Attachment A: Feedback Form

Attachment A: Feedback Form

FEEDBACK	GRIFFIN DECOMMISSIONING EP	STYBARROW DECOMMISSIONING EP	STYBARROW PLUG & ABANDONMENT EP

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2.34 Letter sent to Gascoyne (65 licence holders) and Pilbara / Kimberley recreational marine users (95 licence holders) (17 February 2023)

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Revision: 2

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Uncontrolled when printed. Refer to electronic version for most up to date information.

17 February 2023

1
Silverado Charters Pty Ltd
P O Box 114
HERNE HILL WA 6056

Dear Silverado Charters Pty Ltd,

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.

Please see the relevant QR codes below which link directly to consultation Information Sheets which provide additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our website www.woodside.com. You can also subscribe to receive updates on our consultation activities by subscribing through our Consultation Activities page.

Activity Update: Griffin
Decommissioning EP



Activity Update: Stybarrow
Decommissioning EP



Activity Update: Stybarrow
Plug & Abandonment EP



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.

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 <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.

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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.

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		<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**.

Attachment A: Feedback Form

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Attachment A: Feedback Form

FEEDBACK	GRIFFIN DECOMMISSIONING EP	STYBARROW DECOMMISSIONING EP	STYBARROW PLUG & ABANDONMENT EP

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2.34.1 Email sent to Carnarvon Fishing Club (17 February 2023)

Dear Carnarvon Fishing Club

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)). 	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.

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	<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. 	<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
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		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 	<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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	<p>anticipated to take approximately 2 months to complete.</p>	<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

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		<p>vessels during removal activities.</p> <ul style="list-style-type: none"> • 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.

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2.34.2 Email sent to Ashburton Anglers (17 February 2023)



Hope you're well.

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, including the Ashburton Anglers, 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 	<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

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	<p>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> <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>the 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.

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<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 	<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

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	during removal and potential tow activities.	<p>associated 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.
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.

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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**.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

2.34.3 Email sent to Shark Bay Salt (17 February 2023)



Hope you're well.

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, including the Ashburton Anglers, 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). • 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

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		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

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		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.

2.34.4 Email sent to the Port Hedland Fishing Club (16 February 2023)

Dear Port Hedland Fishing Club

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.

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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. 	<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"> 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. 	<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

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	<ul style="list-style-type: none"> Facilities removal must be completed no later than 31 December 2024, pursuant to General Direction 832. 	<p>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 	<p>P&A Activities</p> <ul style="list-style-type: none"> The Operational Area includes the area encompassing an approximate 3,000 m

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	<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>radius 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. 	<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.

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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.	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).
--	---	---

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.

2.34.5 Letter sent to Gascoyne (65 licence holders) and Pilbara / Kimberley recreational marine users (95 licence holders) (8 March 2023)



Woodside Energy (Australia)
Pty Ltd

ACN 008 923 879

Mia Yellaogona
11 Mount Street
Perth WA 6000
Australia

T +61 8 9348 4000

www.woodside.com

Please direct all responses/queries to:
Woodside Feedback
T: 1800 442 977
E: feedback@woodside.com

08 March 2023

Attn: [Stakeholder]
[Company]
[Address]

Dear Stakeholder

Woodside previously consulted you (correspondence dated 17 February 2023) on Woodside's proposed activities for the decommissioning of 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.

The below QR codes link to our Consultation Information Sheets for the proposed activities, which provide a summary of potential key risks and associated management measures. Should the information be easier for you to access, the Information Sheets are also available on our [website](#).

**Activity Update: Griffin
Decommissioning EP**



**Activity Update:
Stybarrow
Decommissioning EP**



**Activity Update:
Stybarrow Plug &
Abandonment EP**



We would appreciate any feedback you may have by **17 March 2023** to support the development of our proposed environment plans.

You can also subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

Kind regards,

Woodside Feedback



Woodside Energy
Mia Yellaogona
Karlak, 11 Mount Street
Perth WA 6000
Australia

T: 1800 442 977
E: feedback@woodside.com.au
www.woodside.com
f t in y @

2.34.5.1 Email sent to Carnarvon Fishing Club (10 March 2023)

Dear Carnarvon Fishing Club

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

2.34.5.2 Email sent to Port Hedland Game Fishing Club (10 March 2023)

Dear Port Hedland Fishing Club

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

2.35 Email sent to Buurabalayji Thalanyji Aboriginal Corporation (BTAC) (22 February 2023)

Firstly, thank you for your correspondence of 20 February regarding consultations about the Scarborough project. We will respond to this correspondence in the coming days and would be most grateful for the opportunity to meet with you to discuss the matters raised in your letter and our relationship more broadly.

Further to my correspondence of 18 January regarding Woodside's plan to remove the Nganhurra Riser Turret Mooring (RTM), and 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 Buurabalayji Thalanyji Aboriginal Corporation (BTAC) about.

With the exception of removing the Nganhurra RTM and the Scarborough project, for which Woodside is seeking BTAC's feedback as soon as possible, Woodside is seeking BTAC'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)

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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.

Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan

(woodside.com)

We look forward to meeting with you to discuss and respond to the matters raised in your letter, this correspondence, and to discuss other matters important to BTAC and Woodside.

Thank you, [REDACTED], for yours and [REDACTED] consideration and work to progress these important consultations. We are looking forward to working with BTAC.

As always, please feel free to contact me on the details below if you require further information or assistance.

Yours sincerely

2.36 Email sent to Kariyarra Aboriginal Corporation (24 February 2023)

[REDACTED]

In follow up to our telephone conversation on the 27th January please let me know if you have any questions regarding the Environmental Plan (EP) information shared with you to date for Scarborough and Nganghurra RTM.

This email provides further information on Woodside's decommissioning and drilling activities that we are seeking to understand if Kariyarra has any interests in the Environment that may be affected (EMBA) relative to the attached information sheets and if Kariyarra would like us to consult further on these EPs.

With the exception of removing the Nganhurra RTM and the Scarborough project, for which Woodside is seeking Kariyarra's feedback as soon as possible, Woodside is also seeking Kariyarra's feedback on these decommissioning and drilling activities by **17 March 2023**. 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:

- 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)

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- [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.
 - [Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan \(woodside.com\)](#)

If there is anything else, Woodside can do at this time to facilitate consultation if Kariyarra make an assessment that this is required to provide more information about these planned work activities please let me know.

Thank you for your time in considering these matters.

Please feel free to contact me on the details below if you require further information or assistance.

Kind regards

2.36.1 Follow up email sent to Kariyarra Aboriginal Corporation (24 March 2023)

Good [REDACTED]

Just a courtesy follow up to check if you have had the chance to review the emails I've shared on respective activity and if I can assist with any questions you may have.

We welcome the opportunity to provide further detail to you and your board if that is of interest. Please don't hesitate to contact me if you have any queries.

Kind regards
Shanine

2.36.2 Follow up email sent to Kariyarra Aboriginal Corporation (24 March 2023)

Good morning Nic

I hope you are well. I tried reaching out via phone this morning but seem to be having some trouble with the mobile connection so I've also left a message on [REDACTED] mobile to check that I have your current number. In any case please feel free to call me at any stage on [REDACTED]

I just wanted to check in again on the information we have shared with you to date and to seek your guidance on whether or not you would like to arrange a meeting either in-person or online so

that we can clarify anything you may have questions on – we are very happy to accommodate what works for you.

If you could let me know at your earliest convenience that would be most appreciated.

Kind regards
Shanine

2.37 Email sent to Malgana Aboriginal Corporation (17 March 2023)

[REDACTED]

Further to our recent conversations and plans to meet, please additional decommissioning and drilling activities for consideration at the meeting. 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:

- 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:

- 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.
 - [Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan \(woodside.com\)](#)

We look forward to meeting with you and receiving feedback from Malgana about these activities.

Kind regards

[REDACTED]

2.38 Email sent to Nanda Aboriginal Corporation (NAC) (17 March 2023)

[REDACTED]

Thank you for the meeting with YMAC legal on 13 March. It was a pleasure to meet you all.

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I am following up to see whether you have a date and budget for a meeting with Nanda AC (NAC) and to notify you of additional EPs for consideration by the NAC Board outlined below.

1. Woodside's proposal to plug and abandon (P&A) a former production well that was used for the Stybarrow project approximately 50km North West of Exmouth. The Stybarrow project is no longer operating and Woodside is in the process of completing the decommissioning of this project. In preparation for this P&A work, 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 Environmental Plan (EP).

Please see link to the Consultation Information Sheet for this activity, and attached plain English overview. These documents provide further background on this proposed work, including a summary of potential key risks and associated management measures.

2. Woodside plans to drill and complete one new Pluto gas production well called PLA08. Subsea equipment will be installed to connect this well to the existing Pluto subsea infrastructure. It may also carry out maintenance activities on existing Pluto, Pyxis and Xena gas production wells as required. This work will take place in Commonwealth waters, approximately 170 km north-west of Dampier in title area WA-34-L. The proposed PLA08 production well will be located at a water depth of approximately 820m. WA-34-L Pyxis Drilling and Subsea Installation.

Please see link to the Consultation Information Sheet for this activity, and attached plain English overview. These documents provide further background on this proposed work, including a summary of potential key risks and associated management measures.

Woodside is seeking to understand the nature of the interests that NAC and its members may have in relation to these activities. Please feel free to contact me if you require further information or assistance in relation to this matter. We are also happy to discuss appropriate mechanisms for consultation.

NAC can provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling Woodside's feedback number 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please feel free to forward this email and the attached document to NAC members as required. Woodside would be pleased to speak with NAC members in addition to the NAC Board/office holders.

Kind regards

2.39 Email sent to Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) via Yamatji Marlpa Aboriginal Corporation (YMAC) (21 February 2023)



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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.

[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

2.40 Email to Yamatji Marlpa Aboriginal Corporation (YMAC) (21 February 2023)

[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.

[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

[REDACTED]

2.41 Email sent to Ngarluma Aboriginal Corporation (NAC) (24 February 2023)

[REDACTED]

I mentioned I would be sharing more information when we met on Friday 17 February, to discuss the Environmental Plan (EP) information shared with you to date for Scarborough and Nganhurra RTM. This is the email with further information for NAC to consider if they have any interests in the EMBA (Environment that may be affected) relative to the attached information sheets.

It would be greatly appreciated if you could please acknowledge receipt and confirm the opportunity to meet with the NAC board when they are next due to meet on 29 or 30 March. We welcome the opportunity to spend a whole day with the board on a different day if that works.

This email provides information on Woodside's decommissioning and drilling activities that we are seeking to consult with NAC about.

With the exception of removing the Nganhurra RTM and the Scarborough project, for which Woodside is seeking NAC's feedback as soon as possible, Woodside is seeking NAC's feedback on these decommissioning and drilling activities by **17 March** 2023. 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 20 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.
 - [Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan \(woodside.com\)](#)

In providing this information and requests for feedback, I acknowledge that we are working towards presenting to the NAC board at their next board meeting in March. Woodside would be most grateful for the opportunity to meet with NAC, at NAC's earliest convenience, and at a location suitable to NAC. 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 consideration of these matters and work to progress these important consultations.

Please feel free to contact me on the details below if you require further information or assistance.
Regards

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2.42 Email sent to Wirrawandi Aboriginal Corporation (WAC) (24 February 2023)

Good morning, [REDACTED]

I hope your Friday is going well.

I mentioned I would be sharing more information when we met on Tuesday 21 February, to discuss the Environmental Plan (EP) information shared with you to date for Scarborough and Nganghurra RTM. This is the email with further information for Wirrawandi to consider if they have any interests in the Environment that may be affected (EMBA) relative to the attached information sheets.

It would be greatly appreciated if you could please acknowledge receipt and confirm the opportunity to meet with the Wirrawandi board when they are next due to meet in Perth in March.

This email provides information on Woodside's decommissioning and drilling activities that we are seeking to consult with Wirrawandi about.

With the exception of removing the Nganghurra RTM and the Scarborough project, for which Woodside is seeking Wirrawandi's feedback as soon as possible, Woodside is seeking Wirrawandi's feedback on these decommissioning and drilling activities by **17 March** 2023. 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 Nganghurra 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---nganghurra-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.
 - [Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan \(woodside.com\)](#)

In providing this information and requests for feedback, I acknowledge that we are working towards presenting to the Wirrawandi board at their next board meeting in March. Woodside would

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be most grateful for the opportunity to meet at Wirrawandi's earliest convenience, and at a location suitable to Wirrawandi. 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 consideration of these matters and work to progress these important consultations.

Please feel free to contact me on the details below if you require further information or assistance.

Kind regards

2.43 Email sent to Yamatiji Marlpa Aboriginal Corporation (YMAC) (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.

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- [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.
 - [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]'s 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

[REDACTED]

2.44 Email sent to Yindjibarndi Aboriginal Corporation (YAC) (24 February 2023)

[REDACTED]

I understand you last spoke with [REDACTED] on 25 January regarding the Environmental Plan (EP) information shared with YAC for the Scarborough project activity and Nganhurra RTM.

This email provides further information on Woodside's decommissioning and drilling activities that we are seeking to understand if YAC has any interests in the Environment that may be affected (EMBA) relative to the attached information sheets and if YAC would like us to consult further on these EPs.

With the exception of removing the Nganhurra RTM and the Scarborough project, for which I understand YAC has verbally advised they have no interests, Woodside is also seeking YAC's feedback on these decommissioning and drilling activities by **17 March 2023**.

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:

- 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.

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- [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.
 - [Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan \(woodside.com\)](#)

Thank you for your time in considering these matters. We look forward to hearing from you.

Please feel free to contact me on the details below if you require further information or assistance.

Kind regards

2.45 Email sent to Yinggarda Aboriginal Corporation 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 Ju-Lin O'Connor's 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.

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- [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.
 - [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

2.45.1 Follow up email sent to Yinggarda Aboriginal Corporation (YAC) via Yamatji Marlpa Aboriginal Corporation (YMAC) (20 March 2023)

Dear [REDACTED]

I hope this message finds you both well.

Further to our earlier correspondence about Woodside's Scarborough, decommissioning and drilling activities and a potential meeting with Yinggarda Aboriginal Corporation (YAC), and further to the meeting between Woodside and YMAC legal representatives on 13 March, I am following up to see whether you have a date and budget for a meeting with YAC to discuss these matters and whether you require any assistance at this time to organise such a meeting. We would be most grateful for the opportunity to meet with YAC and to assist with the meeting arrangements and resourcing.

As always, please feel free to call me on [REDACTED] if you require any assistance or have any questions about these matters and thank you again for your work on these important matters.

Sincerely

2.46 Email sent to Robe River Kuruma Aboriginal Corporation (RRKAC) (24 February 2023)

Hello [REDACTED]

I understand you met with [REDACTED] on 31 January regarding the Environmental Plan (EP) information shared with Robe River Kuruma Aboriginal Corporation (RRKAC) for the Scarborough project activity and Nganghurra RTM and that this information was to be presented at the RRKAC Board meeting this week 21-22 February. Ju-Lin advised we have a number of EPs we will reach out to RRKAC on.

This email provides further information on Woodside's decommissioning and drilling activities that we are seeking to understand if RRKAC has any interests in the Environment that may be affected (EMBA) relative to the attached information sheets and if RRKAC would like us to consult further on these EPs.

With the exception of removing the Nganhurra RTM and the Scarborough project, for which Woodside would appreciate feedback on as soon as possible, Woodside is also seeking RRKAC's feedback on these decommissioning and drilling activities by **17 March 2023**.

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:

- 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.
 - [Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan \(woodside.com\)](#)

Thank you for your time in considering these matters. We look forward to hearing from you.

Please feel free to contact me on the details below if you require further information or assistance.

Kind regards

2.47 Email sent to Murujuga Aboriginal Corporation (MAC) (24 February 2023)

Wayiba [REDACTED]

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I understand that you met with Woodside on Monday 20 February to further discuss the information shared to date on the Nganhurra RTM decommissioning and Scarborough project activity Environmental Plans (EPs). I believe you have been made aware of other EPs we also request your feedback on.

With the exception of removing the Nganhurra RTM and the Scarborough project, for which Woodside is seeking MAC's feedback as soon as possible, Woodside is also seeking MAC's feedback on these decommissioning and drilling activities by **17 March 2023**.

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:

- 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.
 - [Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan \(woodside.com\)](#)

Thank you for your time in considering these matters and please feel free to contact me on the details below if you require further information or assistance.

Kind regards

2.48 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.

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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 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 	<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.

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	<p>neighbouring 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. 	<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 	<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

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	December 2024, pursuant to General Direction 832.	September 2024, pursuant to General Direction 833. Removal Activities <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 <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

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		<p>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).

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.

Woodside Feedback

2.48.1 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

2.49 Email sent to Karratha Community Liaison Group (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. • Removal of an exploration wellhead (Ramillies-1 in 	<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.

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	<p>neighbouring 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. 	<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.

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		<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.

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2.49.1 Email sent to Karratha Community Liaison Group (8 March 2023)

Dear CLG members,

Woodside is sending this email by way of a reminder that the consultation period to provide feedback on the following proposed activities in Commonwealth waters, is closing soon:

- Activities on the TPA03 production well to remediate a down-hole valve and continue production from the lower reservoir, under the TPA03 Well Intervention Environment Plan (**TPA03 EP**);
- Geotechnical and geophysical surveys, drilling and appraisal of the Julimar South-1 well (previously called JULA-P) and, plug and abandonment of Julimar South-1, if required, under the Julimar Drilling and Surveys Environment Plan (**Julimar EP**);
- Drilling and subsea infrastructure installation activities for one well (PLA08) and contingent well intervention activities for current production wells, under the WA-34-L Pyxis Drilling and Subsea Installation Environment Plan Revision (**PLA08 EP**);
- Decommissioning of the Griffin field under the Griffin Decommissioning and Field Management EP, Griffin Gas Export Pipeline EP and Griffin Field Deviation EP; and
- Decommissioning of the Stybarrow field under the Stybarrow Plug and Abandonment EP, Stybarrow Decommissioning and Field Management EP and Stybarrow Field Deviation EP.

We would appreciate any feedback you may have by **17 March 2023** to support our development of the proposed environment plans.

Best regards,

2.50 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

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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>	<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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	<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

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		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

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		<p>associated project vessels during removal activities.</p> <ul style="list-style-type: none"> • 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.

Woodside Feedback

2.50.1 Email sent to CSIRO (4 June 2023)

Dear [REDACTED]

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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.

Regards
Woodside Feedback

2.51 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.

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>	<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

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	<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"> 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 	<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>

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	<p>approximately 2 months to complete.</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> <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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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,
Woodside Feedback

2.51.1 Email sent to ASBTIA (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

2.52 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

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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,

Woodside Feedback

2.52.1 Email sent to GAP (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

2.53 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 (ASX:WOL) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

Gertsin Decommissioning and Field Management Environment Plan		Stybarrow Plug and Abandonment Environment Plan	
Activity summary:	Field management and removal of subsurface infrastructure above the mudline, including the Blair Tunnel Mooring (OTM)	Activity summary:	The permanent plugging and abandonment of the ten Stybarrow subsurface development wells by placing cement plugs in the wells to prevent hydrocarbon release
Location:	~60 km northwest of Onslow	Location:	~22 km northwest of E smouth
Commencement timing:	Anticipated around mid-2023 or 2024, 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 First EP submission to NOPPSMA: Dec 2022	Consultation commenced:	May 2022 First EP submission to NOPPSMA: Not yet submitted

Gertsin Gas Support Pipeline Environment Plan		Stybarrow Decommissioning and Field Management Environment Plan	
Activity summary:	Preparation for and subsequent removal of ~26 km of gas support pipeline and associated substation	Activity summary:	Field management and removal of subsurface infrastructure above the mudline including the De- connectable Tunnel Mooring (OTM)
Location:	~80 km northwest of Onslow	Location:	~60 km northwest of E smouth
Commencement timing:	Anticipated around mid-2023 or 2024, pending approvals, vessel availability and weather constraints	Commencement timing:	Anticipated around Q4 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 7 months	Estimated duration:	4 months
Consultation commenced:	Jan 2022 First EP submission to NOPPSMA: Mar 2022	Consultation commenced:	Feb 2022 First EP submission to NOPPSMA: Apr 2022

Gertsin Field Deletion Environment Plan		Stybarrow Field Deletion Environment Plan	
Activity summary:	Proposed work in situ (piles in place) of near- to non-load infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles, concrete gravity bases)	Activity summary:	Proposed work in situ (piles in place) of infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles)
Location:	~60 km northwest of Onslow	Location:	~60 km northwest of E smouth
Commencement timing:	Upon environmental plan acceptance and finalising completion or removal activities	Commencement timing:	Upon environmental plan acceptance and finalising completion or 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 First EP submission to NOPPSMA: Feb 2022	Consultation commenced:	May 2022 First EP submission to NOPPSMA: Jun 2022

Figure 1: Stybarrow Field

Figure 1 (Stybarrow) and Figure 2 (Gertsin): Describe the Operational Areas and the Environment that may be affected (EMAs) based on a composite of many different paths and further distance where a highly unlikely, unpaired 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 proposed 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 mudline decommissioning activities include: the physical presence of offshore structures during the (MOCU) and vessel, interaction with other marine users, decommissioning ductile gas platform, chemical, methane hydrocarbon, seabed disturbance, emissions from burning venting and other vessel impacts (noise, light, air emissions and marine discharges). Impacts that could occur due to an unpaired event include hydrocarbon release (prolysis, marine debris or other vessel loss), vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accumulation of waste or other discharges.

Figure 1 and Figure 2 include indicative EMAs 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.

Consultation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of Environment Plans (EPs) for the Stybarrow and Gertsin decommissioning activities. Consultations designed to identify and obtain input from relevant persons to assist Woodside identify measures to avoid or avoid potential adverse effects on the proposed activity or 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 (NOPPSMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2020 (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 Gertsin 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 between Friday 17 March 2023 to:

1. Feedback@woodside.com
 or via: 1800 442 877

Figure 2: Gertsin Field

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ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN00642287) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

G4 Wbs Decommissioning and Field Management Environment Plan

Activity summary:	Field management and removal of subssea infrastructure above the seafloor, including the Star Tunnel Mooring (STM)
Location:	~45 km northwest of Onslow
Commencement if any:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Soil sealed duration:	Approximately 6 months
Consent notice commenced:	Oct 2021
First IP in Intention to NOPS/DMA:	Dec 2021

G4 Wbs Gas Export Pipeline Environment Plan

Activity summary:	Preparation for and subsequent removal of ~26 km of gas export pipeline and associated stabilisation
Location:	~38-45 km northwest of Onslow
Commencement if any:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Soil sealed duration:	Approximately 2 months
Consent notice commenced:	Jan 2022
First IP in Intention to NOPS/DMA:	Mar 2022

G4 Wbs Field Development Environment Plan

Activity summary:	Proposed lease in situ (lease in place) of inert, non-toxic infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles, concrete gravity bases)
Location:	~45 km northwest of Onslow
Commencement if any:	Up to seven months in progress and following completion of other activities
Soil sealed duration:	No duration - infrastructure to be left in situ
Consent notice commenced:	Jan 2022
First IP in Intention to NOPS/DMA:	Feb 2022

Stybarrow Pipeline Abandonment Environment Plan

Activity summary:	The permanent plugging and abandonment of the ten Stybarrow subssea development wells by placing cement plugs in the wells to prevent hydrocarbon release
Location:	~43 km northwest of Onslow
Commencement if any:	Anticipated around late 2022 or 2023, pending approvals, vessel availability and weather constraints
Soil sealed duration:	~4 to 6 months
Consent notice commenced:	May 2022
First IP in Intention to NOPS/DMA:	Not yet submitted

Stybarrow Decommissioning and Field Management Environment Plan

Activity summary:	Field management and removal of subssea infrastructure above the seafloor including the Sea-connectable Tunnel Mooring (STM)
Location:	~43 km northwest of Onslow
Commencement if any:	Anticipated around Q4 2022, pending approvals, vessel availability and weather constraints
Soil sealed duration:	~4 months
Consent notice commenced:	Feb 2022
First IP in Intention to NOPS/DMA:	Apr 2022

Stybarrow Field Development Environment Plan

Activity summary:	Proposed lease in situ (lease in place) of infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles)
Location:	~43 km northwest of Onslow
Commencement if any:	Up to seven months in progress and following completion of other activities
Soil sealed duration:	No duration - infrastructure to be left in situ
Consent notice commenced:	May 2022
First IP in Intention to NOPS/DMA:	Jul 2022

Figure 1 (Stybarrow) and Figure 2 (G4 Wbs): Describe the Operational Area and the Environment that May be Affected (DMA) based on a complete survey of different paths and further 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 outlined in the relevant EA.

Impacts associated with routine decommissioning activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) in the vessel's

near action with other marine users, decommissioning discharges (oil and sludge) and other waste impacts (noise, light, air emissions and marine discharges). Impacts that could occur due to an unplanned event include hydrocarbon release (oil and gas), marine diesel or other vessel fuels, vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accidental loss of waste or other discharges.

Figure 1 and Figure 2: Illustrate the DMA to support persons or organisations understanding of whether their functions, interests or activities may be affected by the proposed activities, with detailed information available in Woodside's Consultation Information Sheets.



Figure 1: Stybarrow Field



Figure 2: G4 Wbs Field

Consent Notice Participation and Feedback:

Woodside is seeking to consult with relevant persons to inform the preparation of Environment Plans (EPs) for the Stybarrow and G4 Wbs decommissioning activities. Consultation is designed to solicit 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 National Offshore Petroleum Safety and Commission Management Authority (NOPSCMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2020 (OPGSA) and support other regulatory submissions associated with the proposed activities.

Detailed consultation information sheets are available at: www.woodside.com/sustainability/consultation-activities if you would like additional information about Stybarrow and G4 Wbs decommissioning 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 at the following: 17 March 2023 via:

S: Feedback@woodside.com
Tel: +61 8 9422 8777

EMPLOYMENT

Administration and Finance

LEGAL SECRETARY
 The Supreme Court is looking for 22 experienced legal secretaries who are organised, motivated and professional.

The role of this position involves the management of legal secretaries and legal clerks.

For more details visit SupremeCourt.wa.gov.au

Applications close 4:00pm, 17 February 2023

Building and Construction

FLOOR & WALL TILES
 Sub-contractor work. High or low volume work. High or low volume work.

TRADES WANTED Carpenters, Plaster, Wallcovering, Painting, Tiling, etc. Call 08 9422 8777

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 in metropolitan primary schools, north and south of the river.

Interested candidates will complete an application form as well as a portfolio for consideration.

THE MANAGER DIRECTOR
 IAWCC, 125 West Perth WA 6150
 Email: director@iawcc.org.au

For further information and to apply for a position, please contact the IAWCC on 08 9422 8777 or visit our website www.iawcc.org.au

Mining and Resources

WESTAUZ MINING

Woodside Mining Pty Ltd are currently seeking for 20 Field Services Technicians for the Perth Operations, WA. This position is based in Perth, WA. The successful candidate will be responsible for the following duties:

- IP Officer
- AD Officer

Interested applicants with BSC/BA in Engineering and 3-5 years experience in the field services industry should apply to:

Woodside Mining Pty Ltd
 Human Resources
 100 St Georges Terrace
 Perth WA 6000
 Email: recruitment@woodside.com.au
 Tel: 08 9422 8777

Trades and Technical

APPLY FOR A PROPERTY MANAGER
 Call 08 9422 8777

PROPERTY MANAGER
 Call 08 9422 8777

PROPERTY MANAGER
 Call 08 9422 8777

Local Govt Vacancies

City of Melville

CONCRETE SERVICES

The City of Melville has an exciting opportunity for a Concrete Services Officer to join the Concrete Services Team. The successful candidate will be responsible for the following duties:

- Provide technical advice and support to the public, private and industry sectors.
- Conduct site inspections and ensure compliance with the Australian Standard AS 3100:2009.

Interested candidates should apply to:

City of Melville
 Human Resources
 100 St Georges Terrace
 Perth WA 6000
 Email: recruitment@cityofmelville.wa.gov.au
 Tel: 08 9422 8777

Local Govt Tenders

City of Joondalup

EXPRESSION OF INTEREST FOR CONCRETE SERVICES

The City of Joondalup is seeking to engage a contractor to provide concrete services for the City's fleet of vehicles. The successful candidate will be responsible for the following duties:

- Provide technical advice and support to the public, private and industry sectors.
- Conduct site inspections and ensure compliance with the Australian Standard AS 3100:2009.

Interested candidates should apply to:

City of Joondalup
 Human Resources
 100 St Georges Terrace
 Perth WA 6000
 Email: recruitment@cityofjoondalup.wa.gov.au
 Tel: 08 9422 8777

General Positions

GENERAL

CLERICAL POSITION S. 1 Outdoor cleaner and 1 Indoor Cleaner. Call 08 9422 8777

GENERAL

CLERICAL POSITION S. 1 Outdoor cleaner and 1 Indoor Cleaner. Call 08 9422 8777

Looking for a new horizon?

Learn new skills. See our Courses & Training section in **Employment** The West Australian

City of Stirling

INVITATION FOR TENDERS

Supply of Interest (SOI) Tenders for Control System

Tender Details:
 Tender ID: 2023-0001
 Tender Closing Date: 18 March 2023

The City of Stirling is seeking to purchase a Control System for the City's Fire Station. The successful candidate will be responsible for the following duties:

- Supply of Control System for the City's Fire Station.
- Installation and commissioning of the Control System.

Interested candidates should apply to:

City of Stirling
 Human Resources
 100 St Georges Terrace
 Perth WA 6000
 Email: recruitment@cityofstirling.wa.gov.au
 Tel: 08 9422 8777

Shire of Murray

Shire of Murray

INVITATION TO TENDER

The Shire of Murray is seeking to purchase a Control System for the Shire's Fire Station. The successful candidate will be responsible for the following duties:

- Supply of Control System for the Shire's Fire Station.
- Installation and commissioning of the Control System.

Interested candidates should apply to:

Shire of Murray
 Human Resources
 100 St Georges Terrace
 Perth WA 6000
 Email: recruitment@shireofmurray.wa.gov.au
 Tel: 08 9422 8777

Shire of East Pilbara

Shire of East Pilbara

PROBITY FOR QUOTATION

The Shire of East Pilbara is seeking to purchase a Control System for the Shire's Fire Station. The successful candidate will be responsible for the following duties:

- Supply of Control System for the Shire's Fire Station.
- Installation and commissioning of the Control System.

Interested candidates should apply to:

Shire of East Pilbara
 Human Resources
 100 St Georges Terrace
 Perth WA 6000
 Email: recruitment@shireofeastpilbara.wa.gov.au
 Tel: 08 9422 8777

City of Cambridge

City of Cambridge

PROBITY FOR TENDER

The City of Cambridge is seeking to purchase a Control System for the City's Fire Station. The successful candidate will be responsible for the following duties:

- Supply of Control System for the City's Fire Station.
- Installation and commissioning of the Control System.

Interested candidates should apply to:

City of Cambridge
 Human Resources
 100 St Georges Terrace
 Perth WA 6000
 Email: recruitment@cityofcambridge.wa.gov.au
 Tel: 08 9422 8777

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ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN004 923376) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

4.4 The Decommissioning and Field Management Environment Plan

Activity name:	Field management and removal of subsurface infrastructure above the mudline, including the Peter Turret Mooring (PTM)
Location:	~45 km northwest of Onslow
Commencement date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 6 months
Consent date of commencement:	Oct 2021 Final EPA release to NOPSDMA Dec 2021

4.4 The Gas Export Pipeline Environment Plan

Activity name:	Preparation for and subsequent removal of 33 km of gas export pipeline and associated stabilisation
Location:	20-60 km northwest of Onslow
Commencement date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 2 months
Consent date of commencement:	Jan 2022 Final EPA release to NOPSDMA Mar 2022

4.4 The Field Debris Environment Plan

Activity name:	Proposed leave in situ (leave in place) of inert, non-toxic infrastructure embedded in the seabed to minimise seabed disturbance (garden plots, concrete/gravelly bases)
Location:	~45 km northwest of Onslow
Commencement date:	Upon environmental plan acceptance and following completion of removal activities
Estimated duration:	No duration – infrastructure to be left in situ
Consent date of commencement:	Jan 2022 Final EPA release to NOPSDMA Feb 2022

Stybarrow Plug and Abandonment Environment Plan

Activity name:	Therapeutic plugging and abandonment of the Stybarrow subsurface development wells by placing cement plugs in the wells to prevent hydrocarbon release
Location:	~33 km northwest of Onslow
Commencement date:	Anticipated around late 2023 or 2024, pending approvals, vessel availability and weather constraints
Estimated duration:	4 to 6 months
Consent date of commencement:	May 2022 Final EPA release to NOPSDMA Not yet submitted

Stybarrow Decommissioning and Field Management Environment Plan

Activity name:	Field management and removal of subsurface infrastructure above the mudline, including the Gas-connectable Turret Mooring (GTM)
Location:	~33 km northwest of Onslow
Commencement date:	Anticipated around Q4 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	4 months
Consent date of commencement:	Feb 2022 Final EPA release to NOPSDMA Apr 2022

Stybarrow Field Debris Environment Plan

Activity name:	Proposed leave in situ (leave in place) of infrastructure embedded in the seabed to minimise seabed disturbance (garden plots)
Location:	~33 km northwest of Onslow
Commencement date:	Upon environmental plan acceptance and following completion of removal activities
Estimated duration:	No duration – infrastructure to be left in situ
Consent date of commencement:	May 2022 Final EPA release to NOPSDMA Jul 2022

Figures 1, Stybarrow and Figure 2, GTM Describe the Operational Area and the Decommissioning Area (DMA) based on a composite of many different data sets and information which is highly specific, updated as needed and subject to change 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 decommissioning activities and proposed field management measures to be implemented for each of the fields identified and will be included in the relevant EP.

Impacts associated with the decommissioning activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessels.

Interaction with other marine users, decommissioning discharges (cement slurry, hydrolysis discharge), seabed disturbance, emissions from burning, flaring and other vessel operations, light, air emissions and marine hydrocarbon releases (crude oil, gas, marine diesel or other vessel fuels), vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accidental releases or other discharges.

Figures 1 and Figure 2 illustrate indicative DMAs 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 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 environmental regulatory administration 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 proposed 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 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: 1800 440 977

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 MLC, 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 reference groups and any organisation or person who wishes to contribute to the review in this area. To register your interest in attending a consultation please email brown@lrc.wa.gov.au before 23 February 2023. For more information visit www.lrc.justice.wa.gov.au

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 RFQ documentation is available from TenderLink, no other provision of documentation is available. Submissions must be lodged via TenderLink Portal – portal.tenderlink.com/ew/exmouth

Canvassing of Councilors will disqualify.

Submissions must be lodged via the TenderLink Portal no later than 2:00pm, Monday 27th February 2023.

Ben Lewis
 CHIEF EXECUTIVE OFFICER

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EMPLOYMENT



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ENVIRONMENT PLANS NOTICE

Woodside Energy (Australia) Pty Ltd (ACN 000 000 207), Woodside Energy Julimar Pty Ltd (ACN 000 000 000) and Woodside Group Pty Ltd (ACN 000 000 000) are preparing to conduct activities in Commonwealth waters as described below:

TPAO Well Intervention Enhancement Plan (Woodside Energy Ltd)

Activity as a matter:	Activities on the TPAO production well to remediate a down-hole valve and continue production from the well reservoir
Location:	- 28 km north-west of Dampier
Commencement date:	Anticipated around mid 2023 pending approvals, vessel availability and weather constraints
Estimated duration:	- 5 to 10 days and will take place 24 hours, 7 days a week
Consent status:	June 2022 Final CP submission to WOPGSA August 2022

Julimar Drilling as a Service Enhancement Plan (Woodside Energy Julimar Pty Ltd)

Activity as a matter:	Geotechnical and geophysical surveys, drilling and appraisal of the Julimar South-1 well and plug and abandonment of Julimar South-10 required
Location:	- 80 km north-west of Dampier
Commencement date:	Anticipated around second half of 2022 pending approvals, vessel availability and weather constraints
Estimated duration:	- 40 days for drilling and appraisal, - 45 days for geophysical and geotechnical surveys and 20 for decommissioning of the Julimar South-1 well. Activities will be conducted 24 hours per day, seven days per week
Consent status:	August 2022 Final CP submission to WOPGSA Not yet submitted

WA-34-L Pylon Drilling and Subsea Installation as a Service Plan (Woodside Group Pty Ltd)

Activity as a matter:	Drilling and subsea infrastructure installation activities for onshore (PLA00) and contingent well intervention activities for current production wells
Location:	- 70 km north-west of Dampier
Commencement date:	Anticipated around second half of 2022 pending approvals, vessel availability and weather constraints
Estimated duration:	- 90 days for the PL A00 well, - 70 days per well for well intervention activities and - 30 days for subsea installation activities. Activities will be conducted 24 hours per day, 7 days per week
Consent status:	June 2022 Final CP submission to WOPGSA Not yet submitted



Figure 1 (TPAO), Figure 2 (Julimar) and Figure 3 (WA-34-L Pylon): The Marine Operational Area and the Offshore that May be Affected (OMA) (based on a compilation of many different paths and furthest 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 outlined in the relevant OP. Impacts associated with the planned activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessels, interaction with other marine users, vessel disturbance such as infrastructure placement and other vessel drilling and construction impacts such as noise, light, air emissions and marine discharges. Impacts that could occur due to an unplanned event including the potential release of hydrocarbons, marine oil spill or other vessel failure, vessel collision with marine fauna, additional vessel disturbance, introduced marine species, accidental loss of waste or other discharges.



Figure 1, Figure 2 and Figure 3 illustrate the OMA 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.

Consultation Period notice as of Feb 15 2023

Woodside is seeking to consult with relevant persons to inform the preparation of Environment Plans (EPs) for these activities. Consultation is designed to help you obtain regulatory information 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 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/australia/australia/consultation-activities 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:

E: Feedback@woodside.com
Toll free: 1800 440 877

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ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN004 823376) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

G#116 Decommissioning and Field Management Environment Plan

Activity summary:	Field management and removal of subsurface infrastructure above the mudline, including the Rose Turret Mooring (RTM)
Location:	~45 km northwest of Orabaw
Commencement timing:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 6 months
Consent to commence:	Oct 2021 First EIP submission to NOPSDMA Dec 2021

G#116 Gas Cops & Pipel to Orabaw Environment Plan

Activity summary:	Preparation for and subsequent removal of ~25 km of gas export pipeline and associated stabilisation
Location:	~30-40 km northwest of Orabaw
Commencement timing:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 2 months
Consent to commence:	Jan 2022 First EIP submission to NOPSDMA Mar 2022

G#116 Field Debris to Orabaw Environment Plan

Activity summary:	Proposed to see in situ (where possible) of metal non-toxic infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles, concrete gravity bases)
Location:	~45 km northwest of Orabaw
Commencement timing:	Upon environmental plan acceptance and following completion of removal activities
Estimated duration:	No duration - infrastructure to be left in situ
Consent to commence:	Jan 2022 First EIP submission to NOPSDMA Feb 2022

Stybarrow Plug and Abandonment Environment Plan

Activity summary:	The plug and abandonment of the Stybarrow subsurface development wells by placing cement plugs in the wells to prevent hydrocarbon release
Location:	~23 km northwest of Zombaith
Commencement timing:	Anticipated around late 2022 or 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	4 to 6 months
Consent to commence:	May 2022 First EIP submission to NOPSDMA Not yet submitted

Stybarrow Decommissioning and Field Management Environment Plan

Activity summary:	Field management and removal of subsurface infrastructure above the mudline including the Dis-connectable Turret Mooring (DTM)
Location:	~23 km northwest of Zombaith
Commencement timing:	Anticipated around Q4 2022, pending approvals, vessel availability and weather constraints
Estimated duration:	4 months
Consent to commence:	Feb 2022 First EIP submission to NOPSDMA Apr 2022

Stybarrow Field Debris to Environment Plan

Activity summary:	Proposed to see in situ (where possible) of infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles)
Location:	~23 km northwest of Zombaith
Commencement timing:	Upon environmental plan acceptance and following completion of removal activities
Estimated duration:	No duration - infrastructure to be left in situ
Consent to commence:	May 2022 First EIP submission to NOPSDMA Jul 2022

Figure 1 (Stybarrow) and Figure 2 (Griffin) describe the Operational Area and the Environmental Management Area (EMA) based on a composite of many different parts and form a highly visible, unobstructed area 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 planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the relevant EIP. Impacts associated with the decommissioning activities include the physical presence of a Healthy Ombine Drilling Unit (HODU) and its interaction with other marine users, decommissioning discharges (pennant, etc.), its hydrology footprint, seabed disturbance, emissions from burning, flaring and other vessel impacts (noise, light, air emissions and marine discharges) impacts that could occur due to an unplanned event include hydrocarbon releases (produced gas, marine diesel or other vessel fuels), vessel collisions with marine fauna, additional seabed disturbance, non-food marine species, accidental loss of waste or other discharges.

Figure 1 and Figure 2 illustrate indicative EMAs 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 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 EIP in accordance with state Commonwealth 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 EIPs. 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.au** or **Tel: 1800 443 977**

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ENVIRONMENT PLAN NOTICE

Woodside Energy (Australia) Pty Ltd (ACN 001 82 876) is proposing to conduct decommissioning activities in Commonwealth waters, and as described below:

Cell 16a Decommissioning and Field Management Environment Plan

Activity summary:	Field management and removal of subsurface infrastructure above the seabed, including the Star Tunnel Mooring (STM)
Location:	~45 km north-west of Geraldton
Commencement date:	Anticipated around second half of 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 6 months
Consent table commencement:	Oct 2021
First CP submission to HOPS/DMA:	Dec 2021

Cell 16b Gas Spill & Pipelines Environment Plan

Activity summary:	Preparation for and subsequent removal of ~26 km of gas export pipeline and associated stabilisation
Location:	~30-60 km north-west of Geraldton
Commencement date:	Anticipated around second half of 2022, pending approvals, vessel availability and weather constraints
Estimated duration:	Approximately 2 months
Consent table commencement:	Jan 2022
First CP submission to HOPS/DMA:	Mar 2022

Cell 16c Field Deviation Environment 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:	~45 km north-west of Geraldton
Commencement date:	Upon environment plan acceptance and following completion of remedial activities
Estimated duration:	No duration - Infrastructure to be left in situ
Consent table commencement:	Jan 2022
First CP submission to HOPS/DMA:	Feb 2022

Stybarrow Plug and Abandonment Environment Plan

Activity summary:	Therapeutic plugging and abandonment of the three Stybarrow subsurface development wells by placing cement plugs in the wells to prevent hydrocarbon release
Location:	~20 km north-west of Geraldton
Commencement date:	Anticipated around late 2022 or 2023, pending approvals, vessel availability and weather constraints
Estimated duration:	4 to 6 months
Consent table commencement:	May 2022
First CP submission to HOPS/DMA:	Not yet submitted

Stybarrow Decommissioning and Field Management Environment Plan

Activity summary:	Field management and removal of subsurface infrastructure above the seabed including the Disconnectable Tunnel Mooring (DTM)
Location:	~20 km north-west of Geraldton
Commencement date:	Anticipated around Q4 2022, pending approvals, vessel availability and weather constraints
Estimated duration:	4 months
Consent table commencement:	May 2022
First CP submission to HOPS/DMA:	Apr 2022

Stybarrow Field Deviation Environment Plan

Activity summary:	Proposed leave in situ (leave in place) of infrastructure embedded in the seabed to minimise seabed disturbance (anchors, piles)
Location:	~20 km north-west of Geraldton
Commencement date:	Upon environment plan acceptance and following completion of remedial activities
Estimated duration:	No duration - Infrastructure to be left in situ
Consent table commencement:	May 2022
First CP submission to HOPS/DMA:	Jul 2022

Figure 1 (Stybarrow) and Figure 2 (Cell 16c) describe the Operational Areas and the Environment Sensitive Areas (ESAs) based on a composite of many different paths and disturbances which highly vary in frequency, intensity and duration based on weather and operational events.

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 are being developed for each impact identified and will be applied in the region. CP impacts associated with the decommissioning activities include the physical disturbance of a nearby Offshore Drilling Unit (ODU) and vessels.



Figure 1 - Stybarrow Field

Interaction with other marine users, decommissioning discharges (cement), sediment, hydrocarbon, hydrolysis, seabed disturbance, emissions from flaring, heating and other vessel impacts (noise, light, air emissions and marine discharges) impacts that could occur due to an unplanned event include hydrocarbon release (venting gas, marine diesel oil) or other vessel, flaring, vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accidental loss of waste or other discharges.

Figure 1 and Figure 2 illustrate the ESAs to support persons or corporations 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 2 - Cell 16c Field

Consent table Participation and Feedback

Woodside is seeking to consult with interested persons to inform the preparation of Environment Plans (EPs) for the Stybarrow and Cell 16c decommissioning activities. Consultation is designed to verify and obtain input from interested persons to assist Woodside identify measures to lessen or avoid potential adverse effects of 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 2004 (OPGSA) and support other regulatory instruments associated with decommissioning activities.

Detailed consultation information sheets are available at: www.woodside.com.au/consultation by the relevant activity. If you would like additional information about Stybarrow and Cell 16c 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 by Friday, 17 March 2022 via:
 E: Feedback@woodside.com
 Toll-free: 1800 442 877

PUBLIC NOTICES



Planning and Development Act 2005 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:
 - Receiving a portion of Lot 254 Clarence Street, Harrocks from "Commercial" zone to "Residential R27" zone;
 - Receiving a portion of Lot 1 Hazel Way, Harrocks from "Rural" zone to "Residential R27" zone;
 - Receiving Lots 20, 21 and 47 Mitchell Street, Harrocks from "Local Scheme Reserve – Public Open Space" zone to "Residential R12.5";
 - Modifying a portion of Lot 10 Grace Street, Harrocks from "Additional Use 3" (A3) to "Additional Use 4" (A4);
 - Receiving Lots 23 and 22 Mary Street, Northampton from "Special Use 2 to Public Purpose – Emergency Services";
 - Receiving Lots 525 and 18 North West Coastal Highway Area, from "Special Use" zone to "Rural - Additional Use 2" (AU2) zone; and
 - Remove the S103 Public Drinking Water Source Protection over Yarra Springs, Northampton and Pot Coagery

Plans and documents setting out and explaining the scheme amendment have been deposited at the Shire of Northampton Council Offices, Hampton Road, Northampton and the Aber 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

Submitters 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 4.00 pm Friday 7th April 2023.

MAURICE BATHILMA
 ACTING CHIEF EXECUTIVE OFFICER
 20/04/2023, 11:02 AM (GMT+8:00)



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2.54 Activity Update Summary Consultation Information Sheet – Stybarrow Field Decommissioning

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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:

1. Well plugging and abandonment
2. Equipment removal
3. 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.

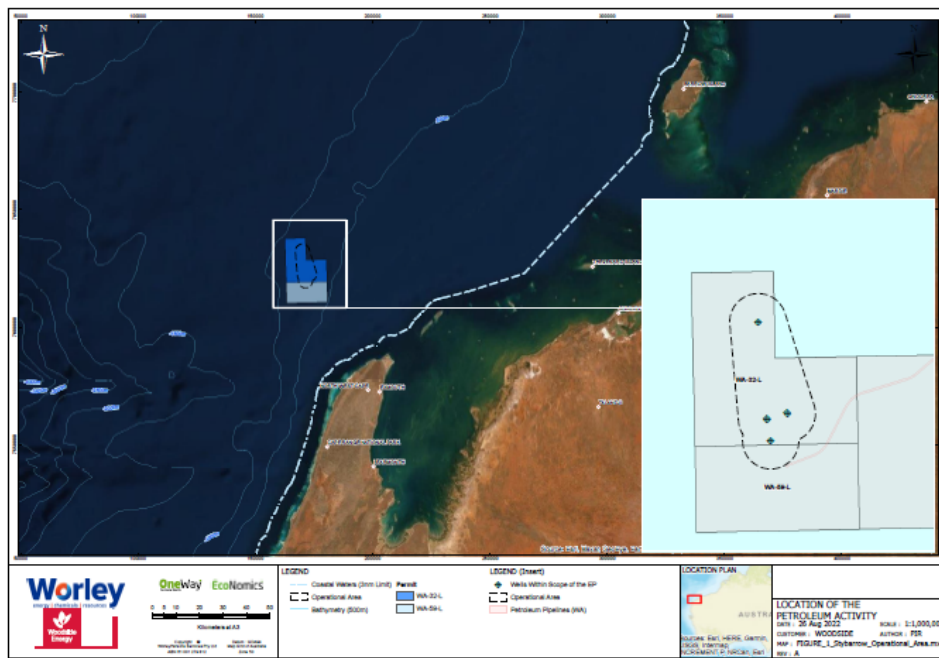


Figure 1. Stybarrow Location Map

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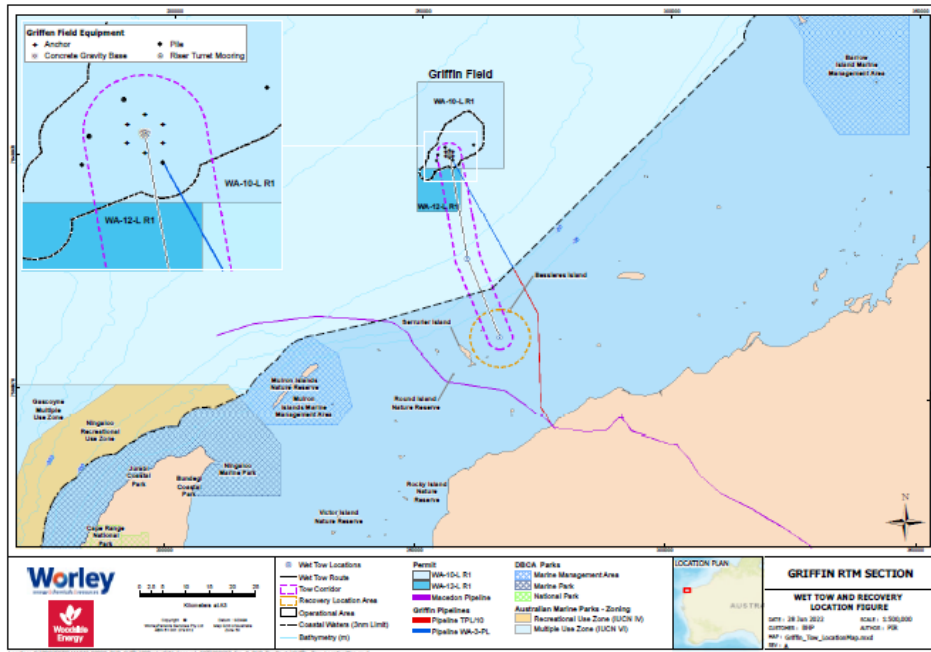


Figure 2. Griffin RTM Tow and Lift Area

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.

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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>.

www.woodside.com



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2.55 Email sent to titleholders (1 June 2023)

- Shell
- INPEX
- PE Wheatstone
- Fugro
- KATO Corowa / KATO Energy (WA) Pty Ltd
- Kyushu Electric Wheatstone

Dear Titleholder

Woodside is providing this update on the progressive decommissioning of the Stybarrow field, 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 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 Sheet. The Information Sheet provide details on activities proposed to be managed under a number of environment plans (EPs), 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.

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 NOPSEMA.

Please let us know if you would like to update previous feedback or have any additional views by **1 July 2023**.

Activity:

	Stybarrow Field Decommissioning Activities
Summary:	Plugging and Abandonment (P&A) Activities

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- 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.

Removal Activities

- 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).

In Situ Activities

- 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.

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Location:	<ul style="list-style-type: none"> • 53 km northwest of Exmouth, Western Australia.
Approx. Water Depth (m):	<ul style="list-style-type: none"> • Approx. 810 – 850 m.
Schedule:	<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>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>P&A Activities</p> <ul style="list-style-type: none"> • The Operational Area includes the area

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	<p>encompassing an approximate 3,000 m radius 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>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

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shallower water location (if required).

Feedback:

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,

Woodside Feedback

2.55.1 Email sent to titleholders (23 June 2023)

- *Shell*
- *INPEX*
- *Fugro*
- *KATO Corowa / KATO Energy (WA) Pty Ltd*
- *Kyushu Electric Wheatstone*

Dear Titleholder,

Woodside previously consulted you (email below) on its plans to decommission the Stybarrow field 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 Sheet. The Information Sheet provide details on activities proposed to be managed under a number of environment plans (EPs), 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

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2.56 Email and letter sent to Specimen Shell Managed Fishery (30 licence holders) and West Coast recreational marine users (97 licence holders) (9 June 2023)

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Please direct all responses/queries to:
 Woodside Feedback
 T: 1800 442 877
 E: Feedback@woodside.com.au

9 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.

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.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheet. The Information Sheet provide details on activities proposed to be managed under a number of environment plans (EPs), including a summary of potential key risks and associated management measures. The Information Sheets are also available on our website: www.woodside.com.

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 NOPSEMA.

Please let us know if you would like to update previous feedback or have any additional views by **9 July 2023**.

Activity:

	Griffin Field Decommissioning Activities	<u>Stybarrow</u> 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 	<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>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. 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

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<p>Exclusionary/Cautionary 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>complete and DTM removal activities are anticipated to take approximately 1 month to complete.</p> <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:

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 **9 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,

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Woodside Feedback



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f t in v @

Attached: Consultation Information Sheet

2.56.1 Email and letter sent to Specimen Shell Managed Fishery (30 licence holders) and West Coast recreational marine users (97 licence holders) (26 June 2023)

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Please direct all responses/queries to:
 Woodside Feedback
 T: 1800 442 877
 E: Feedback@woodside.com.au

|

26 June 2023

Dear Stakeholder

Woodside previously consulted you (correspondence dated 9 June 2023) on its plans to progressively decommission 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.

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.

A summary of proposed activities is outlined below, and more detailed information is provided in the attached Consultation Information Sheet. The Information Sheet provide details on activities proposed to be managed under a number of environment plans (EPs), including a summary of potential key risks and associated management measures. The Information Sheets are also available on our website: www.woodside.com.

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 NOPSEMA.

Please let us know if you would like to update previous feedback or have any additional views by **9 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 	<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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Access

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	<p>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. 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

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		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. 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).

Feedback:

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 **9 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,

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Woodside Feedback



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www.woodside.com
f t in y @

Attached: Consultation Information Sheet

2.57 Email to Department of Transport (5 July 2023)

Hi [REDACTED]

As part of Woodside's ongoing consultation for its current and planned activities, I would like to advise WA Department of Transport (DoT) that Woodside is preparing the *Stybarrow Decommissioning and Field Management Environment Plan* (EP). The EP will support removal and field management of subsea infrastructure required as part of the progressive decommissioning of the Stybarrow field, which is in 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.

Woodside would like to offer DoT the opportunity to review or provide comment on the activity.

For reference, the DoT would have received OPEPs for other Stybarrow decommissioning activities from the former titleholder, BHP Petroleum.

Information is presented as follows:

- A Consultation Information Sheet providing information on the proposed activities is available here: [Link](#)
- The *Stybarrow Decommissioning and Field Management Oil Pollution First Strike Plan* is also attached. This will form part of the approval submission in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).
- In the table below, as requested in the *Offshore Petroleum Industry Guidance Note* (July 2020) and from recent engagement activities between DoT and Woodside, responses to the information requirements are presented in a succinct summary.

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977 by **Friday 18 August 2023**.

Your feedback and our response will be included in our Environment Plan which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

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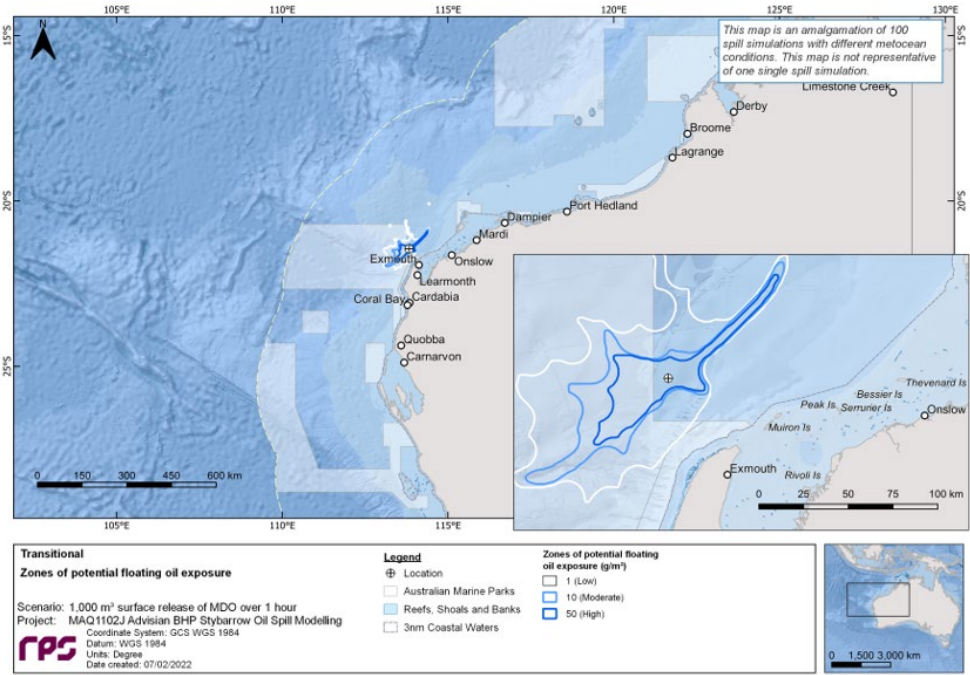
Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Many thanks,



Information Requested in the Offshore Petroleum Industry Guidance Note (July 2020)	Information Provided & Reference
Description of activity, including the intended schedule, location (including coordinates), distance to nearest landfall and map.	Included in the consultation information sheet
Worst case spill volumes.	Included in Appendix 1 of the First Strike Plan
Known or indicative oil type/properties.	Included in Appendix 1 of the First Strike Plan
Amenability of oil to dispersants and window of opportunity for dispersant efficacy.	Surface dispersant is also not deemed to be suitable for spills of marine diesel oil (MDO).
Description of existing environment and protection priorities.	Included in Section 3 of the First Strike Plan
Details of the environmental risk assessment related to marine oil pollution - describe the process and key outcomes around risk	<p>Unplanned loss of containment events from the Petroleum Activities Program have been identified during the risk assessment process (presented in Section 8 of the EP). Further descriptions of risk, impacts and mitigation measures (which are not related to hydrocarbon preparedness and response) are provided in Section 8 of the EP.</p> <p>Annex 1 of the First Strike Plan presents the credible scenarios for the Petroleum Activities Program. One worst-case credible scenario (CS-01 – Vessel collision resulting in rupture of MDO tank) has been used for response planning purposes for the activity as all other scenarios are of a lesser scale and extent. By demonstrating capability to meet and manage events of this size and timescale, Woodside assumes relevant scenarios that are smaller in nature and scale can also be managed by the same capability.</p>

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<p>identification, risk analysis, risk evaluation and risk treatment. For further information see the Oil Pollution Risk Management Information Paper (NOPSEMA 2021).</p>	<p>Response performance outcomes have been defined based on a response to the WCCS.</p>
<p>Outcomes of oil spill trajectory modelling, including predicted times to enter State waters and contact shorelines.</p>	<p>Credible Scenario 1 – loss of containment due to vessel collision resulting in rupture of MDO tank Instantaneous release of 1,000 m³. 5% residue of 50 m³</p> <p>Minimum time to shoreline contact (above 100 g/m²) in days – based on stochastic modelling</p> <p>No contact at response thresholds (>100 g/m²) or at/above the low threshold (≥10 g/m²).</p> <p>Stochastic modelling for the MDO scenario was undertaken by RPS in February 2022 using NOPSEMA’s contemporary modelling thresholds. The white EMBA below shows the ‘low’ threshold i.e. floating hydrocarbon concentrations at or above 1 g/m². The transitional season was selected as it shows the shortest distance to State waters.</p> <p>Floating hydrocarbons at the low threshold (1 g/m²) are not predicted to cross into State waters – see inset:</p>  <p>Figure 11.3 Zones of potential floating oil exposure from a vessel based spill at the DTM buoy during transitional conditions. The results were calculated from 100 spill simulations.</p>
<p>Details on initial response actions and</p>	<p>Included in Section 2 of the First Strike Plan</p>

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key activation timeframes.	
Potential Incident Control Centre arrangements.	Included in Appendix D and E of the First Strike Plan
Potential staging areas / Forward Operating Base.	A Forward Operating Base can be established at Exmouth and/ or Dampier.
Details on response strategies.	Included in Section 2 of the First Strike Plan
Use of DoT equipment resources	Woodside has access to its own and contracted stockpiles of response equipment and acknowledges that potential use of DoT resources cannot be assumed and is at the discretion of DoT.
Details and diagrams on proposed IMT structure including integration of DoT arrangements as per this IGN.	Included in Annex 5, 6 and 7 of the First Strike Plan
Details on testing of arrangements of OPEP/OSCP.	<p>Level 1 Response – one Level 1 ‘First Strike’ drill conducted within two weeks of commencing activity. For campaigns with an operational duration of greater than one month this will occur within the first two weeks of commencing the activity and then at least every 6 month hire period thereafter.</p> <p>Level 2 Response – A minimum of one Emergency Management exercise per MODU per campaign. For campaigns with an operational duration of greater than one month this will occur within the first month of commencing the activity and then at least every 6 month hire period thereafter.</p> <p>Level 3 Response – the number of CMT exercises conducted each year is determined by the Chief Executive Officer, in consultation with the Vice President of Security and Emergency Management.</p> <p>Testing of Oil Spill Response Arrangements</p> <p>Woodside’s arrangements for spill response are common across its Australian operating assets and activities to ensure the controls are consistent. The overall objective of testing these arrangements is to ensure that Woodside maintains an ability to respond to a hydrocarbon spill, specifically to:</p> <p>Ensure relevant responders, contractors and key personnel understand and practise their assigned roles and responsibilities.</p> <p>Test response arrangements and actions to validate response plans.</p> <p>Ensure lessons learned are incorporated into Woodside’s processes and procedures and improvements are made where required.</p> <p>Woodside’s Testing of Arrangements Schedule aligns with international good practice for spill preparedness and response management; the testing is compatible with the IPIECA Good Practice Guide and the Australian Institute for Disaster Resilience (AIDR) Australian Emergency Management Arrangements Handbook. If a spill occurs, enacting these arrangements will underpin Woodside’s ability to implement a response across its petroleum activities.</p> <p>The hydrocarbon spill arrangements included within the schedule are tested against Woodside’s regulatory commitments. Each arrangement has a support agency/company and an area to be tested</p>

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	<p>(e.g. capability, equipment and personnel). For example, an arrangement could be to test Woodside’s personnel capability for conducting scientific monitoring, or the ability of the Australian Marine Oil Spill Centre to provide response personnel and equipment.</p> <p>If new response arrangements are introduced, or existing arrangements significantly amended, additional testing is undertaken accordingly. Additional activities or activity locations are not anticipated to occur; however, if they do, testing of relevant response arrangements will be undertaken as soon as practicable.</p> <p>In addition to the testing of response capability within the schedule, up to eight formal exercises are planned annually, across Woodside, to specifically test arrangements for responding to a hydrocarbon spill to the marine environment.</p> <p>Some arrangements may be tested across multiple exercises (e.g. critical arrangements) or via other ‘additional assurance’ methods outside the formal Testing of Arrangements Schedule that also constitute sufficient evidence of testing of arrangements (e.g. audits, no-notice drills, internal exercises, assurance drills).</p>
Additional comments	<p>Please note some of the links in the document are still being finalised, and as such may show a reference error in the attached version.</p> <p>The final version will include a CRN and Doc ID number.</p>



Hydrocarbon Spill Adviser | Corporate HSE

2.58 Email to AMSA – Marine Pollution (5 July 2023)

Hi

As part of Woodside’s ongoing consultation for its current and planned activities, I would like to advise the Australian Maritime Safety Authority (AMSA) that Woodside is preparing the *Stybarrow Decommissioning and Field Management Environment Plan* (EP). The EP will support removal and field management of subsea infrastructure required as part of the progressive decommissioning of the Stybarrow field, which is in 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.

Woodside would like to offer AMSA the opportunity to review or provide comment on the activity.

For reference, AMSA would have received OPEPs for other Stybarrow decommissioning activities from the former titleholder, BHP Petroleum.

Information is presented as follows:

- A Consultation Information Sheet providing information on the proposed activities is available here: [Link](#)
- The *Stybarrow Decommissioning and Field Management Oil Pollution First Strike Plan* is also attached. This will form part of the approval submission in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

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If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977 by **Friday 18 August 2023**.

Your feedback and our response will be included in our Environment Plan which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Many thanks,



2.59 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, 1 November 2023

Ad reach: 106,480 users


Impressions: 972,443 views

Clicks through to Consultation Information page: 4,218 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)

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Woodside Energy
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Would you like to know what Woodside has planned on land and sea?

We'd like to talk with you.

To find out about our current and proposed work and to share your views with Woodside on your relevant location, activities or interests visit: [woodside.com/consultation-activities](https://www.woodside.com/consultation-activities).

Alternatively, you can contact us at Feedback@woodside.com.au or on 1800 442 977.

[woodside.com](https://www.woodside.com)
Woodside's consultation activities [Learn more](#)



Woodside Energy
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Would you like to know what Woodside has planned on land and sea?

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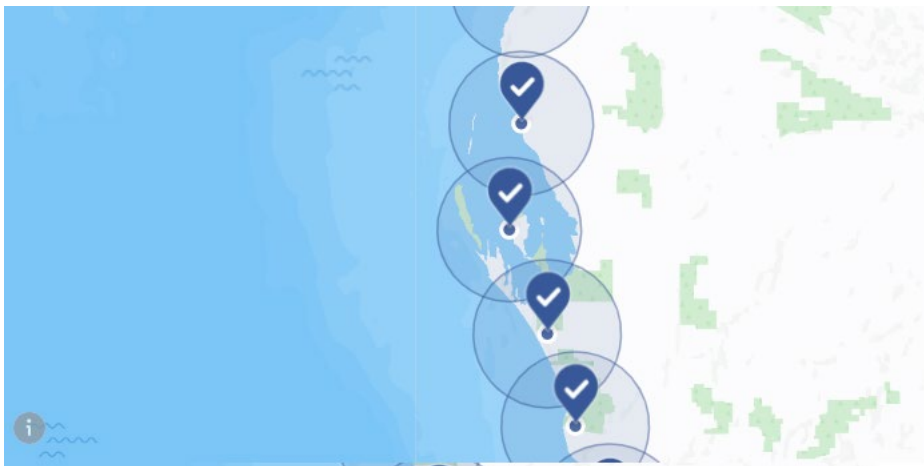
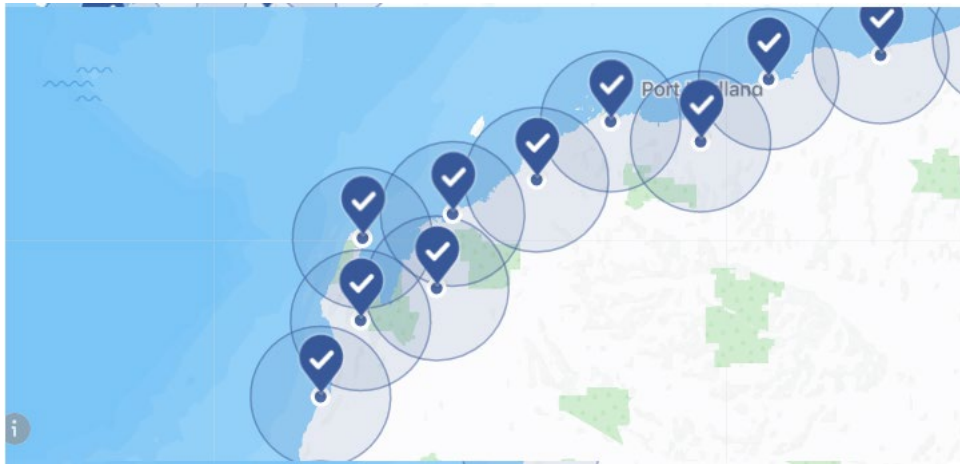
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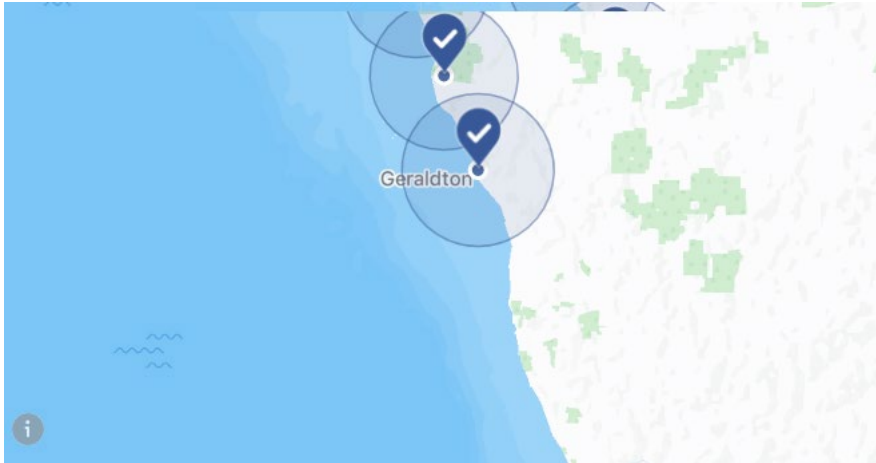


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2.60 Exmouth Community Information Session geotargeted social media campaign

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

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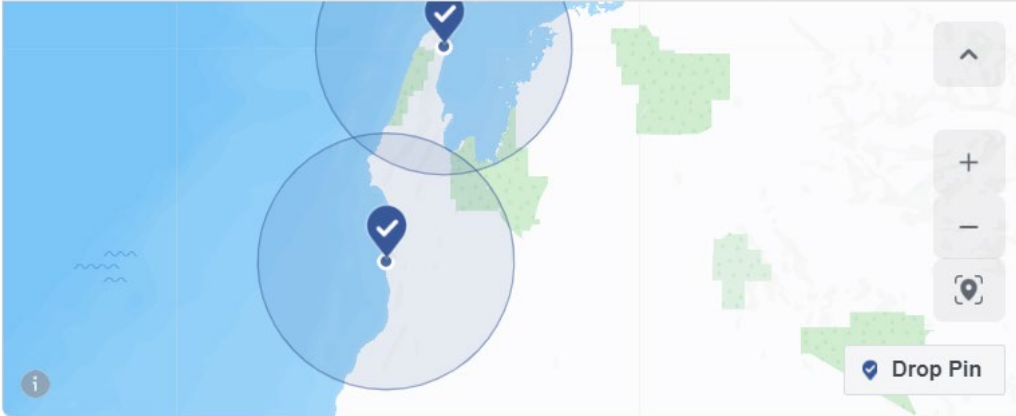
Reach people living in or recently in this location. ⓘ

Australia

✓ Coral Bay, Western Australia City + 80 km ▼

✓ Exmouth, Western Australia City + 80 km ▼

✓ Include ▼ 🔍 Search locations Browse



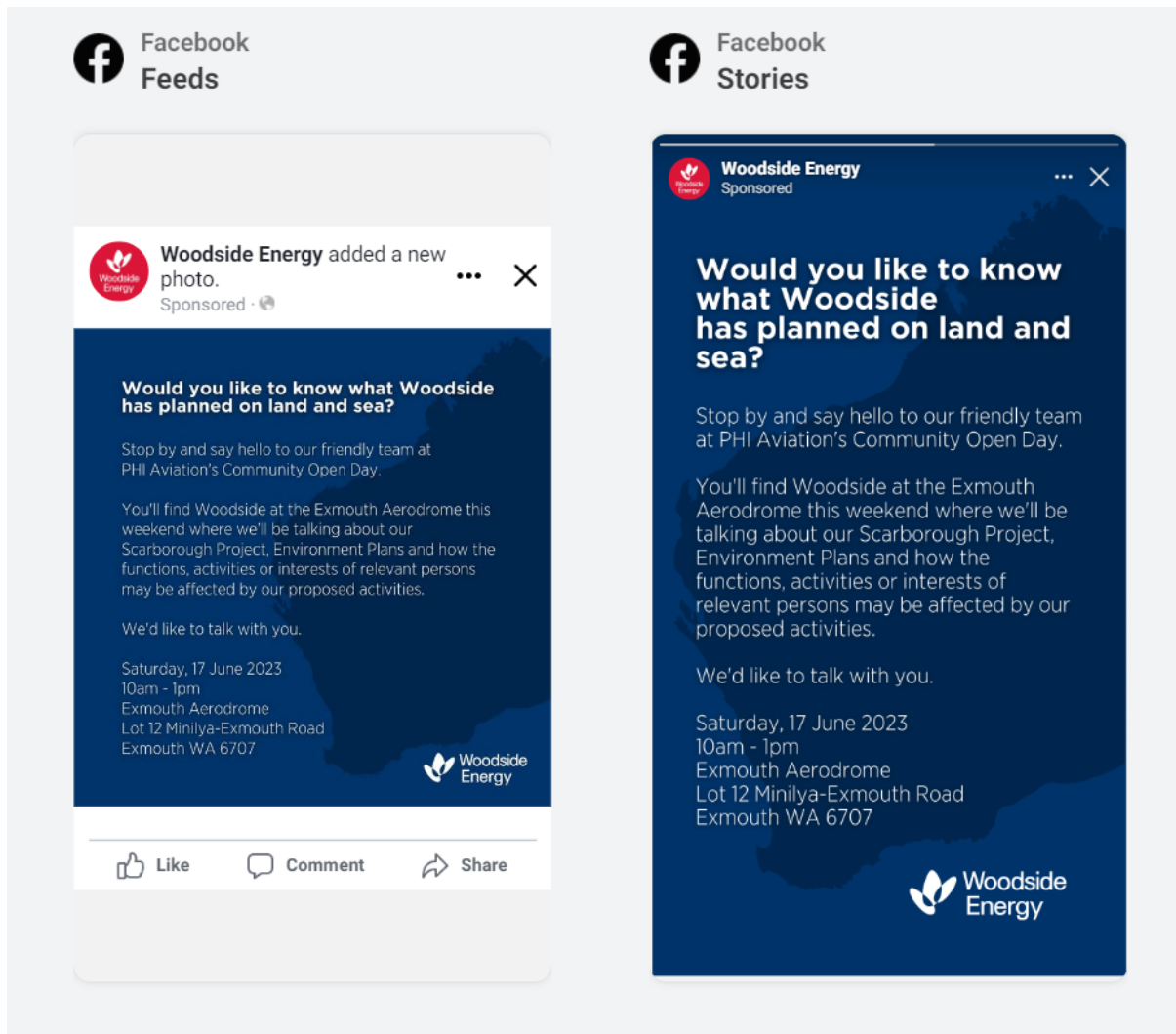
The image shows a map of Australia with two locations marked: Coral Bay and Exmouth. Each location has a blue pin icon with a white checkmark and a semi-transparent circle representing an 80km radius. The map interface includes a search bar, a 'Drop Pin' button, and navigation controls like zoom in (+) and zoom out (-) buttons. The text above the map lists the two locations with their respective 80km radius indicators.

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2.61 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

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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
22 June 2023

Wednesday
19 July 2023



Posters for Community Information Session, Roebourne – 19 July 2023

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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
- 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

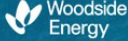
COMMUNITY INFORMATION SESSIONS IN IERAMUGADU

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 22 June 2023	Wednesday 19 July 2023
---------------------------------	----------------------------------



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2.62 Karratha Community Information Session newspaper advertisement – Pilbara News (28 June 2023)

Pilbara NEWS
Wednesday, June 28, 2023

pilbaranews.com.au

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 Paraburdoo 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 2400 WA and Indigenous businesses in 2022 as part of its local buying program.

The figure included \$618m with Pilbara-based businesses, \$504m 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

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.

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2.63 Karratha Community Information Session (28 June 2023) Facebook post

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



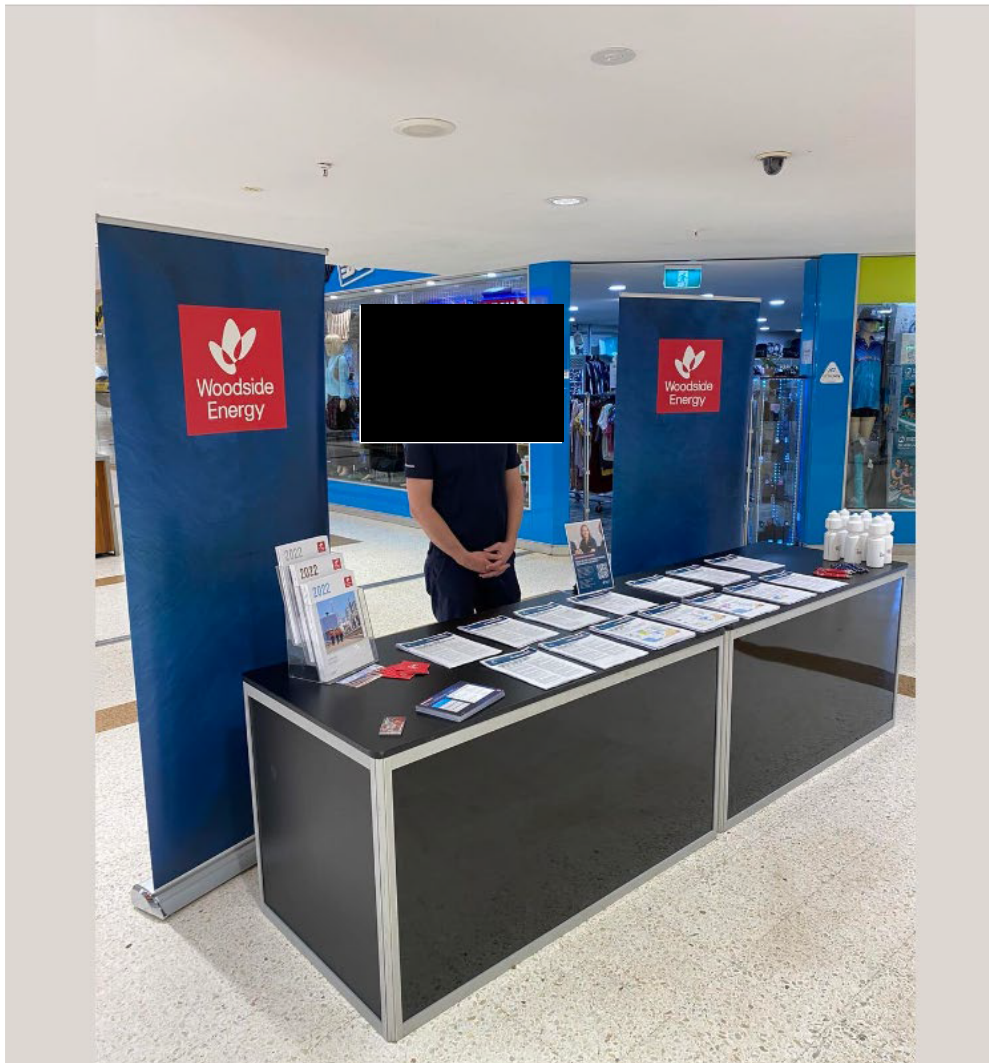
Woodside North West

Published by Woodside Comms · 28 June at 10:07 · 🌐



Stop by [Karratha City Shopping Centre](#) today and say our hello to our friendly team 🙌

We'll be here until 12pm to share information about our planned and proposed activities, our contribution in the community and employment pathways.



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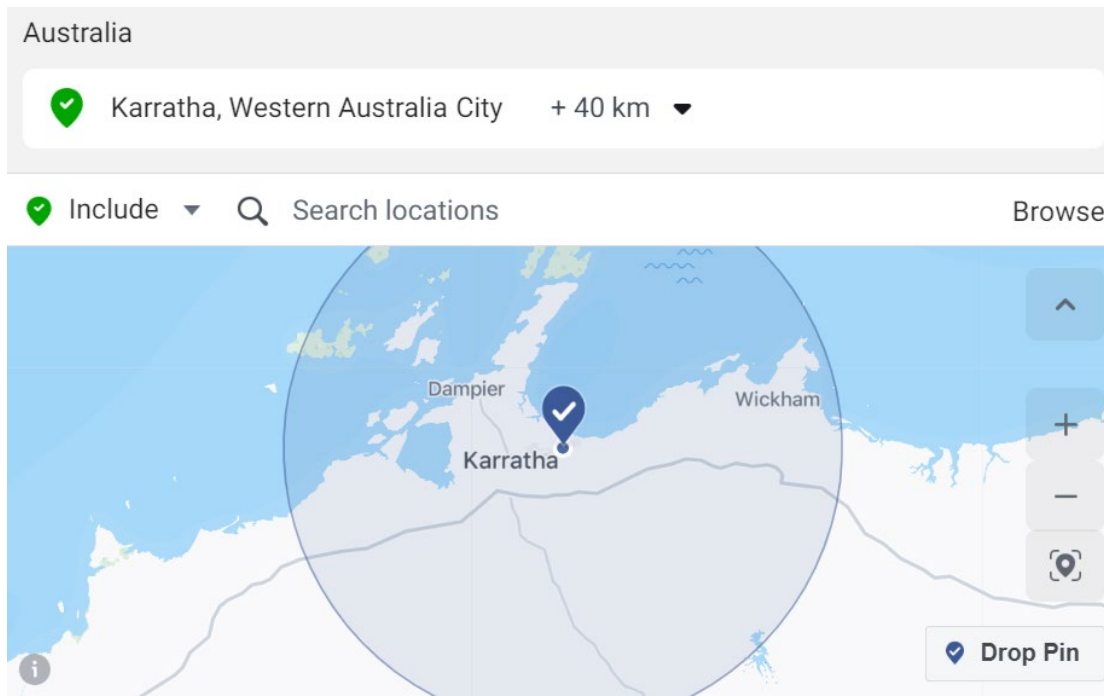
2.64 Karratha Community Information Session (29 June 2023) Geotargeted Social Media Campaign

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 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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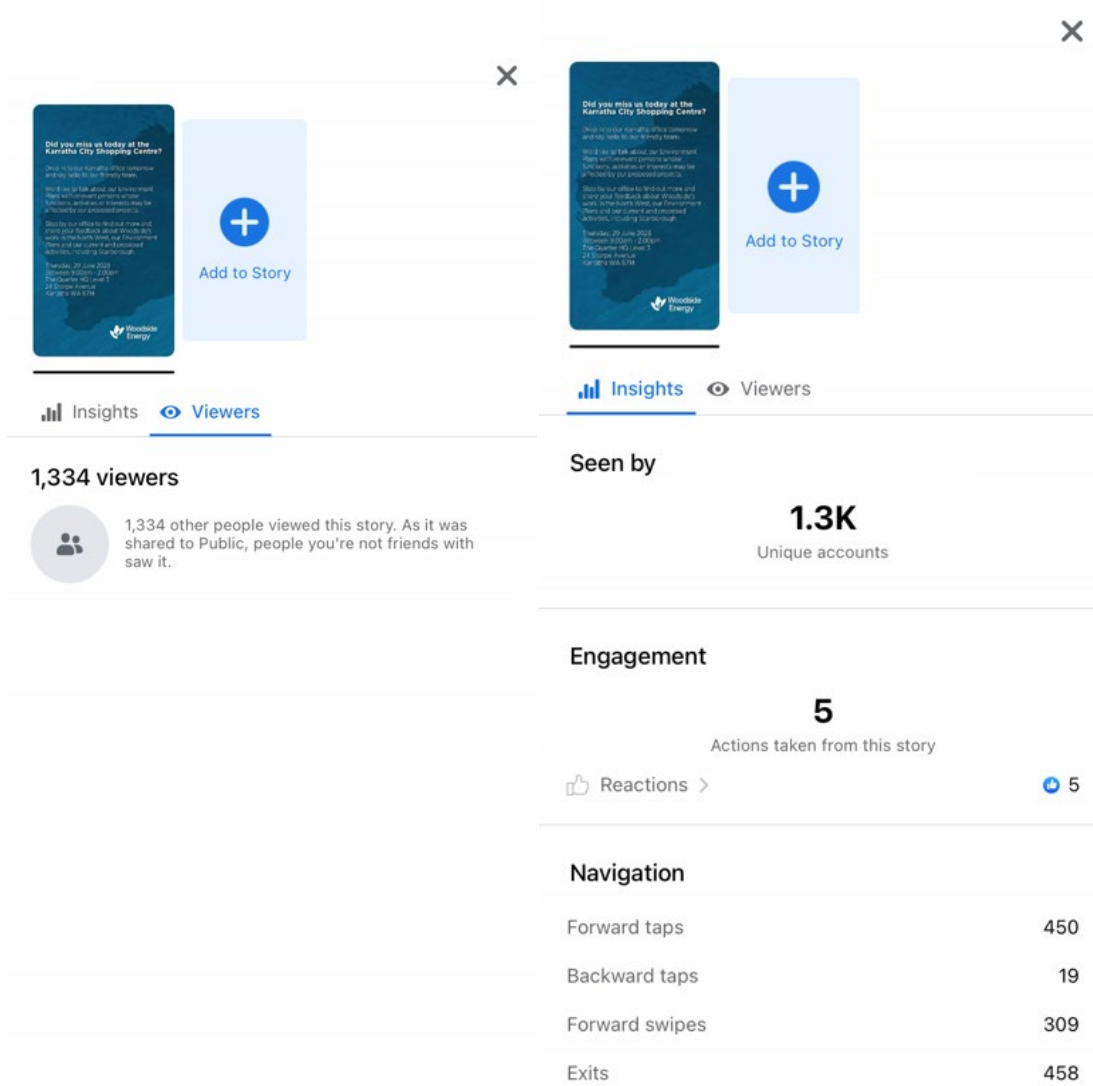
On 28 June 2023, Woodside posted a story on its Woodside North West Facebook account, sharing details of its drop-in session.

Reach: 1,366 viewers

Impressions: 22,931 views

Geotargeting: 40 km radius around Karratha

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Woodside North West 16 h

Did you miss us today at the Karratha City Shopping Centre?

Drop in to our Karratha office tomorrow and say hello to our friendly team.

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 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



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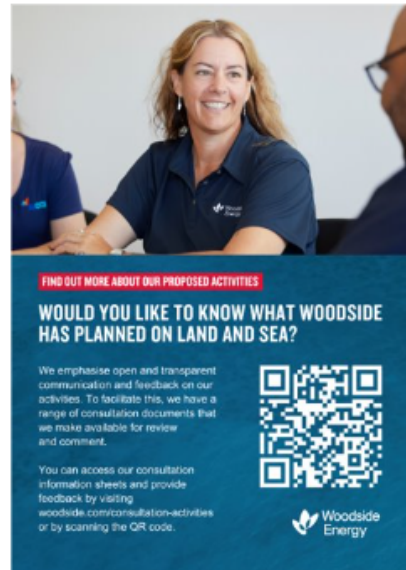
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2.65 Presentation to Karratha Community Liaison Group (29 June 2023)

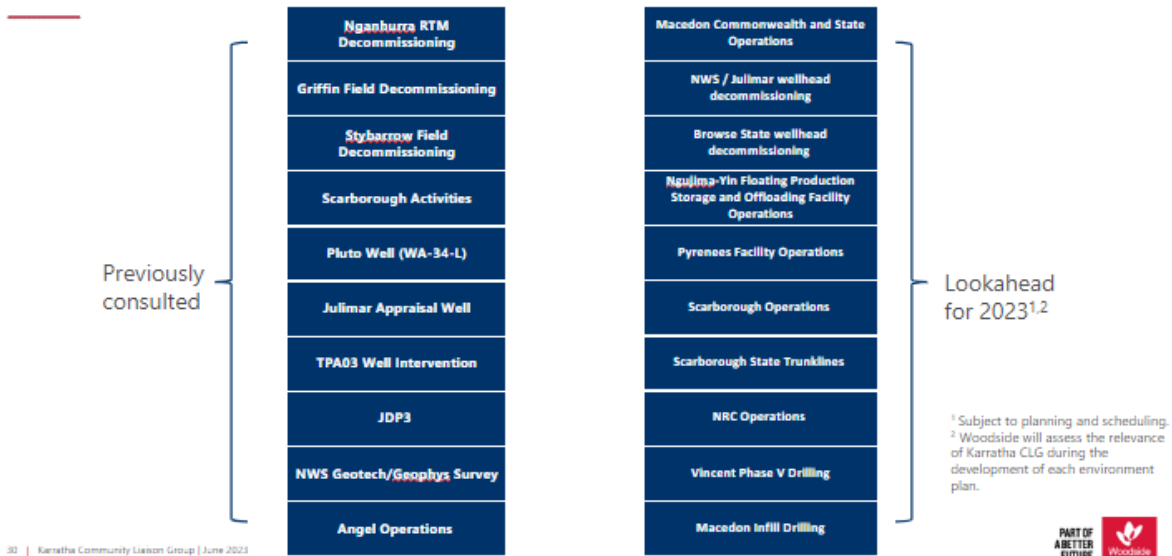
ENVIRONMENT PLAN CONSULTATION

- Changes to Commonwealth Environment Plan (EP) consultation requirements.
- Woodside is now consulting based on the **environment that may be affected (EMBA)** by a proposed petroleum activity rather than within the Operational Area.
- The EMBA is the largest spatial extent where unplanned events, no matter how unlikely, could potentially have an environmental consequence.
- Any person or organisation who does not wish to continue to receive EP consultation materials where they have only been assessed as 'relevant' for unplanned events in the EMBA, under the EP consultation requirements, please advise us in writing and we will not send further information.
- However, you should be aware that this request will need to be recorded in our EP documents and will be publicly available.
- We will be holding a drop-in session after this meeting for anyone in community who would like to know more about any of our EPs.



29 | Karratha Community Liaison Group | June 2023

ENVIRONMENT PLAN CONSULTATION Consultation with Karratha CLG



30 | Karratha Community Liaison Group | June 2023



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2.66 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 Groves.

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 @woodsideNW on social media. www.woodside.com



6 NEWS Pilbara NEWS
Wednesday, August 2, 2023

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 Jerram, Martin, Santos, Yara, and QUB 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 Trent Whitford 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 create a profound sense of belonging by reflecting the students' culture through artwork.

What particularly attracted the school to Mel's artwork was its unique point-by-point 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 400 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, including painting, drawing, collaging, and chalk drawings – under the enchanting winter weather.

The entire experience served to nurture the student's creativity and appreciation for art, leaving a lasting impact on their artistic aspirations.

Ms Collins said she was thrilled to see the whole school come 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 numerous art sessions in the park 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
- Karratha
- Coral Bay
- Onslow
- Dampier
- Port Hedland
- Roebourne
- Exmouth
- 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

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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.



Environment Plan Banner



ENGAGE WITH WOODSIDE ON OUR PLANS ON LAND AND SEA

Environment Plans
Are you an individual, organisation or community group whose functions, interests or activities may be affected by our activities?
We would like to hear your views.

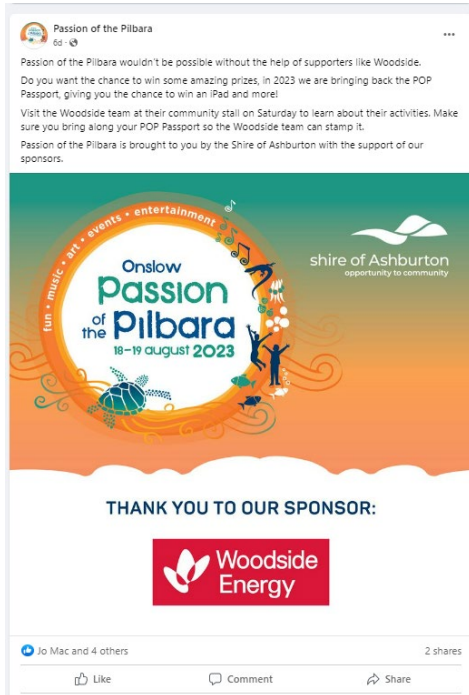
Engage with us further
To identify as a relevant person for consultation on our Environment Plans, please speak with our team or contact us at:
Feedback@woodside.com Or phone 1800 442 977.

To find out more about Woodside's current and proposed work and any of our Environment Plans that may affect you scan the QR code.

2.67 Passion of the Pilbara social media (18 August 2023)

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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

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Feeds

Facebook Feeds

Woodside North West added a new photo. Sponsored

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.

Like Comment Share

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.

2.68 Community Information Session – Karratha, Port Hedland and Roebourne (18 – 20 September 2023)

Pilbara News Advertisement – 13 September 2023

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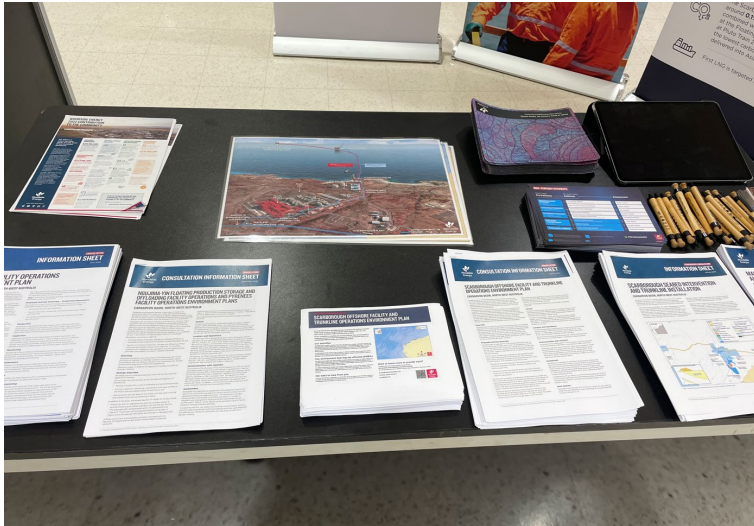
Social Media Tiles – 6 - 16 September 2023

<p>Are you interested in what Woodside has planned on land and sea?</p> <p>Stop by and say hello to our friendly team in Karratha.</p> <p>We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.</p> <p>Monday, 18 September 2023</p> <p>Between 8.00am - 12.00pm Karratha Shopping Centre Sharpe Avenue Karratha</p> <p>Between 3.00pm - 6.00pm Red Earth Arts Precinct 27 Welcome Road Karratha</p> 	<p>Are you interested in what Woodside has planned on land and sea?</p> <p>Stop by and say hello to our friendly team in Port Hedland.</p> <p>We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.</p> <p>Tuesday, 19 September 2023</p> <p>Between 10.00am - 5.00pm South Hedland Square 9-31 Throssell Road South Hedland</p> 	<p>Are you interested in what Woodside has planned on land and sea?</p> <p>Stop by and say hello to our friendly team in Roebourne.</p> <p>We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.</p> <p>Wednesday, 20 September 2023</p> <p>Between 10.00am - 4.00pm Woodside Office, Roebourne 39 Roe Street Roebourne</p> 
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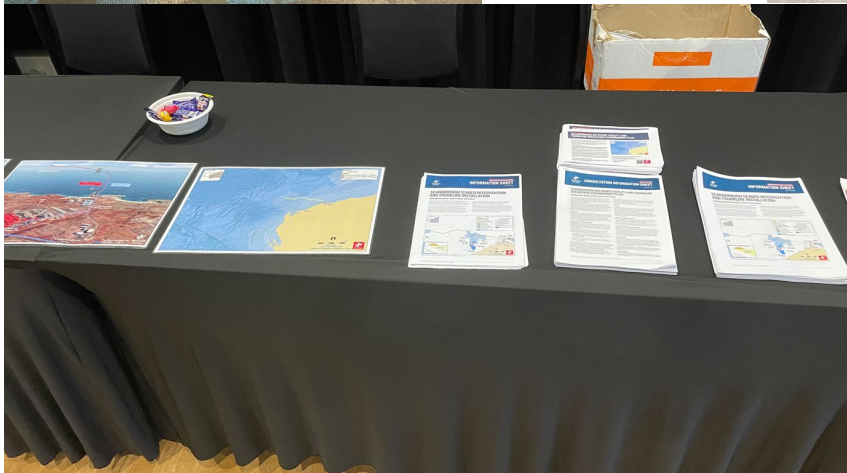
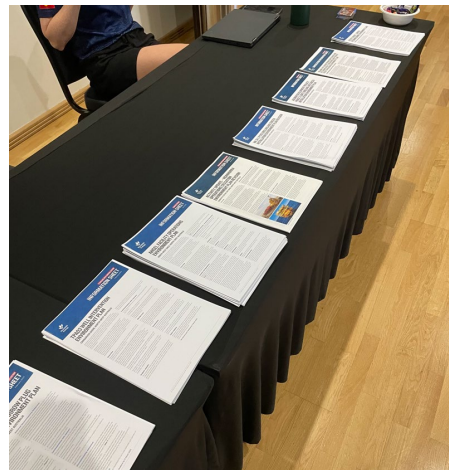
Karratha Shopping Centre – 18 September 2023



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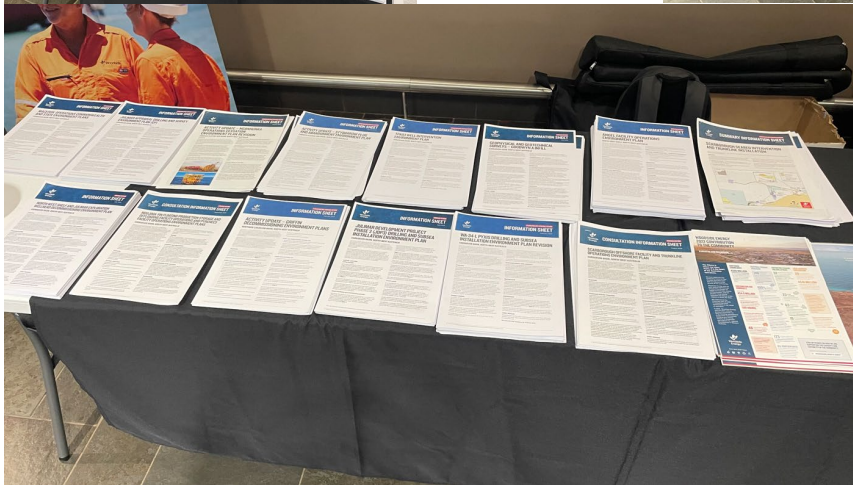


Red Earth Arts Precinct – 18 September 2023



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South Hedland Square – 19 September 2023



Roebourne – Woodside Office – 20 September 2023

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Revision: 2

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2.69 Presentation to Karratha Community Liaison Group (29 September 2023)

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CONSULTATION

Previously consulted

Griffin Field Decommissioning
Stybarrow Field Decommissioning
Scarborough Activities (Drilling and Completions and Seabed Intervention and Trunkline Installation)
Pluto Well (WA-34-L)
Julimar Appraisal Well
TPA03 Well Intervention
JDP3 Subsea Tieback
Goodwyn A Geotech/Geophys Survey
Angel Operations
Macedon (State) Operations
NWS and Julimar Wellheads

Ngujima-Yin Floating Production Storage and Offloading Facility Operations
Pyrenees Facility Operations
Scarborough Offshore Facility and Trunkline Operations EP

Currently consulting



Scan the QR code or visit woodside.com/consultation-activities to access our consultation information.



LOCAL ENGAGEMENT SESSIONS

- We consult relevant persons in the course of preparing an Environment Plan (EP) to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that may be taken to lessen or avoid potential adverse effects of the proposed activity on the environment.
- This month we held sessions for local community members to seek information about our EPs, to discuss functions, activities of interest that by be affected by our proposed projects and to provide an opportunity for feedback.
- Locations included the Karratha Shopping Centre, Red Earth Arts Precinct, Woodside's Roebourne Office
- Sessions were advertised to build community awareness and interest.

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 9:00am - 12:00pm Karratha Shopping 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 Trossell Road South Hedland</p>	<p>Wednesday, 20 September 2023 Between 10:00am - 4:00pm Woodside Office 33 Rose Street Roebourne</p>

You can access our consultation information, provide feedback and subscribe for updates by scanning the QR code.

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 10:00am - 12:00pm
Karratha Shopping Centre
Sharpe Avenue
Karratha

Between 1:00pm - 5:00pm
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 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
33 Rose Street
Roebourne

Advertisement - Pilbara News, 13 September 2023

Facebook advertisements



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2.70 Community Information Session – Carnarvon and Denham (16 and 17 October 2023)

Newspaper advertisement -

Pilbara News – 4 October 2023

Pilbara NEWS
Wednesday, October 4, 2023

NEWS 13

MinRes in \$24m deal with local company

DANIEL SPENCE

Local Pilbara Indigenous-owned business Djolanna Pty Ltd has been awarded a \$24 million contract by Mineral Resources as part of the company's flagship Onslow Iron project.

It is the largest contract MinRes has ever signed with an Indigenous-owned business, as well as the first contract awarded to Djolanna Pty Ltd, which is a Rohe River Kuruma business. The Rohe River Kuruma people are the traditional owners of the land on which the Kent's Bore mine site is located.

"The four-year contract is for exploration earthworks at Kent's Bore mine site, including constructing access tracks, building drill pads, road maintenance and general earthworks.

Djolanna Pty Ltd will employ about 10 people as



MinRes managing director Chris Ellison and Djolanna business owner Bevan Wally. Picture: Russell James

part of the contract including a project manager, mechanics, operators and administration staff.

Djolanna Pty Ltd owner Bevan Wally, who grew up on country, said: "The support provided by MinRes has given us the confidence and capacity to help establish and grow our business. MinRes have shown us action and given us commitments. It's unreal for them to invest and give us a job."

MinRes managing director Chris Ellison said that the company was proud to partner with businesses such as Djolanna 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 Mingenev.

Applications accepted between 1 to 31 October 2023.

TO APPLY
visit mineralresources.com.au/our-sustainability/community or email communities@mr.com.au



Schools to get a staff cash boost

DANIEL SPENCE

Pilbara schools will benefit from a multi-million-dollar cash injection from the State Government to recruit and retain staff.

Education Minister Tanya Butt said the success of last year's temporary Regional Attraction and Incentive Package meant an additional 18 schools would benefit from \$16.49 million worth of incentive packages.

Schools in the Pilbara who will receive a boost include Broome Senior High School, Carnarvon Community College, Karratha Senior High School, 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 \$5,000 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," Mr Butt said.

Schools in regional and remote areas faced additional challenges when recruiting and retaining teachers.

"This significant investment will bring greater continuity for regional and remote students, their families, and the whole community," he said.

The temporary Regional Attraction and Retention Incentive was initially allocated to 48 regional and remote schools.



FIND OUT MORE ABOUT OUR PROPOSED ACTIVITIES

ARE YOU INTERESTED IN WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Speak to our friendly team members at one of our sessions in October.

Monday, 16 October 2023 Between 10.00am - 2.00pm Gwoonwardu Mia 146 Robinson Street Carnarvon	Tuesday, 17 October 2023 Between 9.00am - 1.00pm Denham Town Hall Hughes Street Denham
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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 1965.

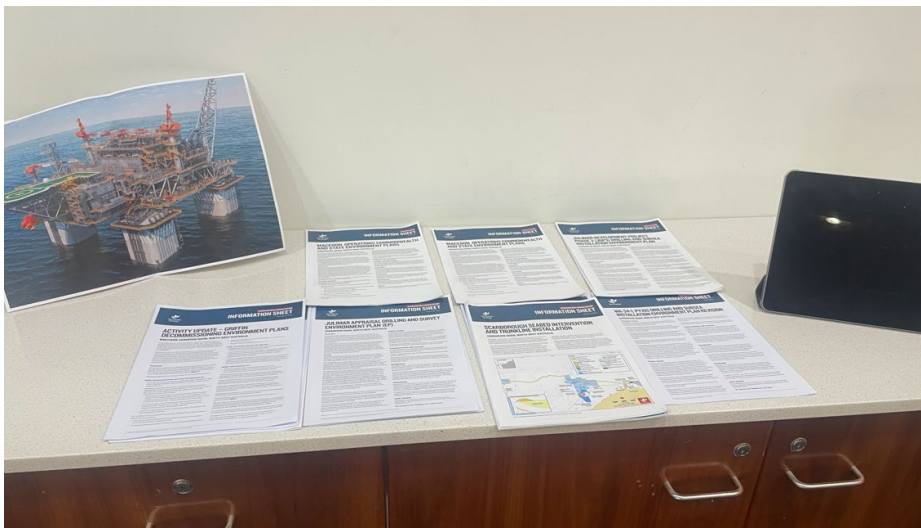
For more information please contact the Department of Health by email to ahinfo@health.wa.gov.au or call 08 9222 2000 or visit health.wa.gov.au and search fluoridation.

Dr Andrew Richardson
Chief Health Officer

Banners and stand information

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Gwoonwardu Mia – 16 October 2023



Social media tile and story – 9 to 16 October 2023

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Revision: 2

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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

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

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

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

Shark Bay Townhall – 17 October 2023

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2.71 Community Information Session – Exmouth - 23 October 2023

Newspaper advertisement

Pilbara News Advertisement – 11 October 2023

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Pilbara news
Wednesday, October 11, 2023

© pilbaranews.com.au

NEWS 5

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 62.4 per cent or 950 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 carriers or only allowing animals on early morning flights on days over 35C but was knocked back by the company.

"In over 20 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 & Salena, 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 23C."

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."




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

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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 Exmouth.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Monday, 23 October 2023

Between 10.00am - 5.00pm

Exmouth Chamber of Commerce and Industry
22 Maidstone Crescent
Exmouth



Are you interested in what Woodside has planned on land and sea?


Stop by and say hello to our friendly team in Exmouth.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Monday, 23 October 2023

Between 10.00am - 5.00pm

Exmouth Chamber of Commerce and Industry
22 Maidstone Crescent
Exmouth



2.72 Presentation to Karratha Community Liaison Group (29 September 2023)


CONSULTATION

Previously consulted

- Griffin Field Decommissioning
- Stybarrow Field Decommissioning
- Scarborough Activities (Drilling and Completions and Seabed Intervention and Trunkline Installation)
- Pluto Well (WA-34-L)
- Julimar Appraisal Well
- TPA03 Well Intervention
- JDP3 Subsea Tieback
- Goodwyn A Geotech/Geophys Survey
- Angel Operations
- Macedon (State) Operations
- NWS and Julimar Wellheads


Currently consulting

- Ngujima-Yin Floating Production Storage and Offloading Facility Operations
- Pyrenees Facility Operations
- Scarborough Offshore Facility and Trunkline Operations EP



Scan the QR code or visit [woodside.com/consultation-activities](https://www.woodside.com/consultation-activities) to access our consultation information.

26 | Karratha Community Liaison Group Meeting | Q3 2023



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LOCAL ENGAGEMENT SESSIONS

- We consult relevant persons in the course of preparing an Environment Plan (EP) to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that may be taken to lessen or avoid potential adverse effects of the proposed activity on the environment.
- This month we held sessions for local community members to seek information about our EPs, to discuss functions, activities of interest that may be affected by our proposed projects and to provide an opportunity for feedback.
- Locations included the Karratha Shopping Centre, Red Earth Arts Precinct, Woodside's Roebourne Office
- Sessions were advertised to build community awareness and interest.



Advertisement - Pilbara News, 13 September 2023

Facebook advertisements

27 | Karratha Community Liaison Group Meeting | Q3 2023



2.73 Email sent to Bundi Yamatji Aboriginal Corporation (BYAC) (17 March 2023)

Dear [REDACTED]

[REDACTED] finds you well.

I am contacting you to discuss Woodside's environmental plans in relation to the following activities:

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)

Julimar Appraisal Drilling.

Consultation Information Sheet - Julimar Appraisal Drilling and Survey Environment Plan (woodside.com)

In preparing for this work, 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 each EP. The attached documents provide further information about this work, including a summary of the potential risks and the management measures Woodside plans to implement for this work.

Woodside is seeking to understand the nature of the interests that Bundi Yamatji Aboriginal Corporation (BYAC) and its members may have in relation to these activities by 17 April 2023. If there are other methods of consultation that BYAC would like Woodside to undertake, we would be pleased to work with BYAC to accommodate these.

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Please feel free to contact me if you require further information or assistance in relation to this matter. Feedback can be provided directly to me on the details below, to Feedback@woodside.com.au, by calling Woodside's feedback number 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please feel free to forward this email and the attached document to BYAC members as required. Woodside would be pleased to speak with BYAC members in addition to the BYAC Board/office holders.

Kind regards

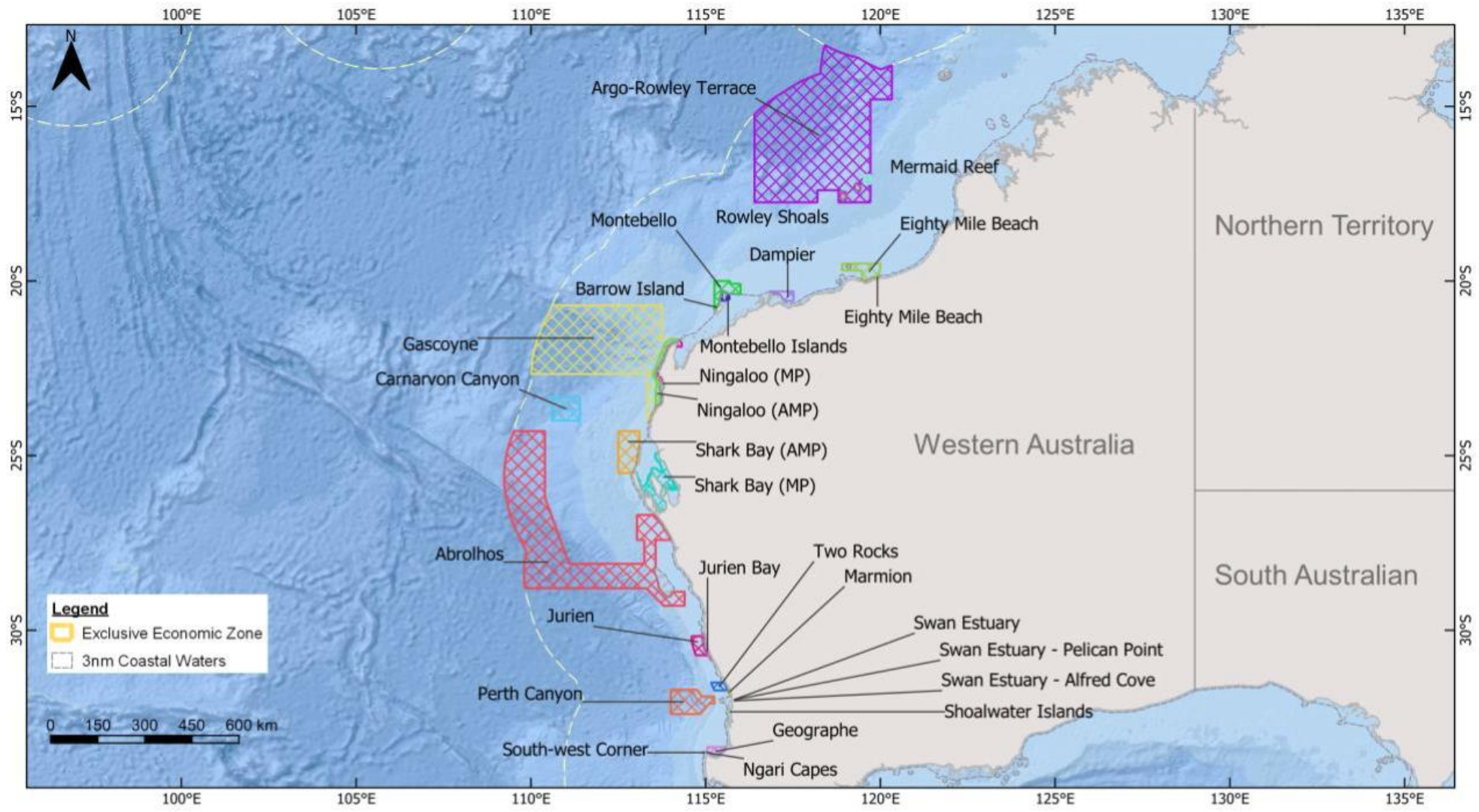
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Appendix G Environmental Receptor Locations used in Oil Spill Modelling

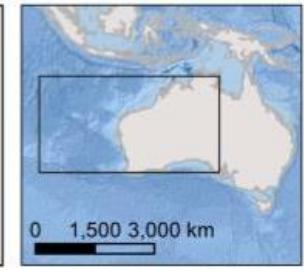


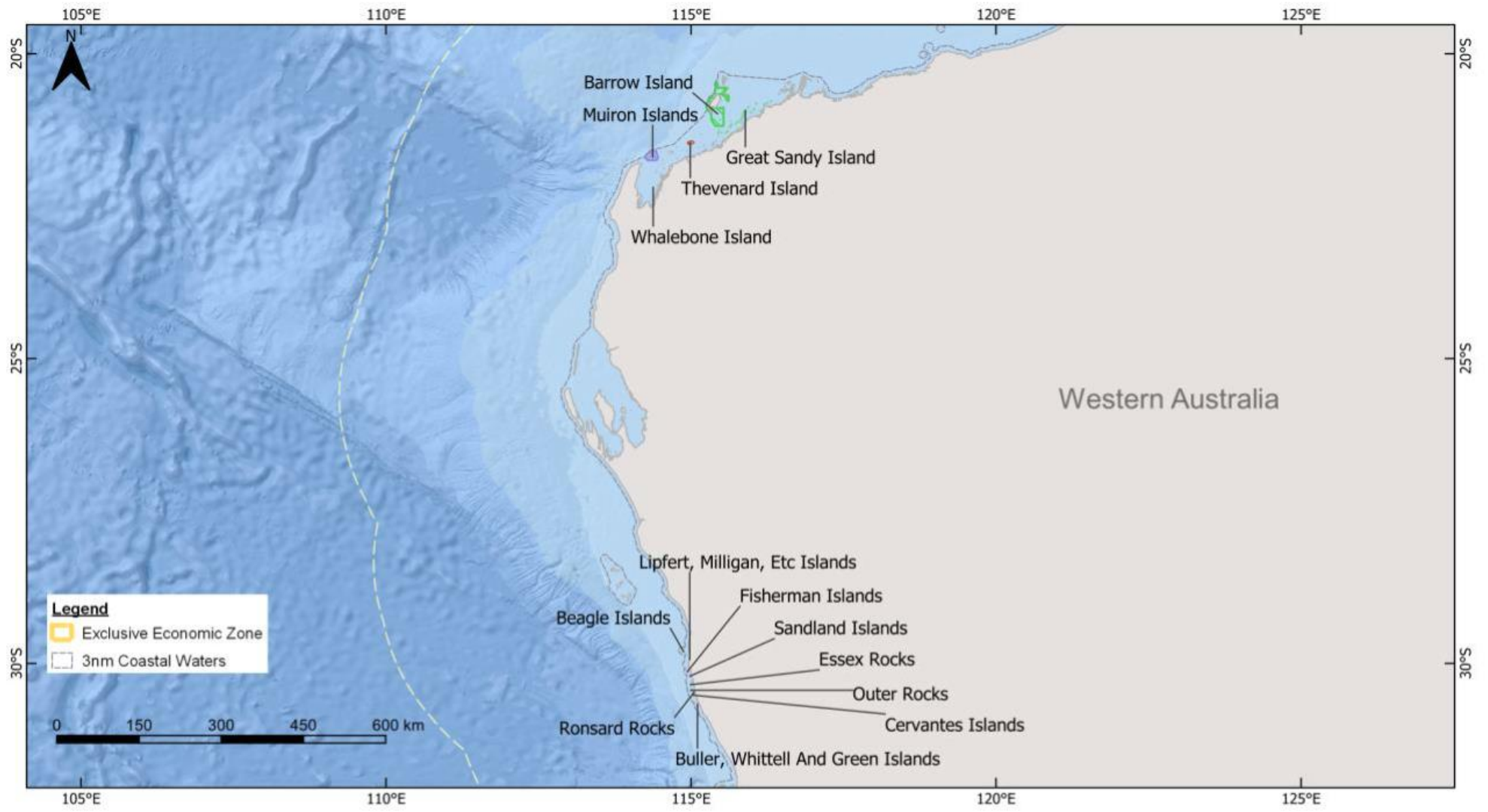
Receptor Map - Australian Marine Parks and Marine Parks



Coordinate System: GCS WGS 1984
 Datum: WGS 1984
 Units: Degree
 Date created: 09/29/2021

- | | | | | |
|--------------------------------|---|---|--|--|
| Australian Marine Parks | <ul style="list-style-type: none"> Abrolhos Argo-Rowley Terrace Carnarvon Canyon Dampier Eighty Mile Beach Gascoyne Geographe | <ul style="list-style-type: none"> Jurien Mermaid Reef Montebello Perth Canyon South-west Corner Two Rocks Ningaloo (AMP) Shark Bay (AMP) | Marine Parks <ul style="list-style-type: none"> Barrow Island Eighty Mile Beach Jurien Bay Marmion Montebello Islands Ngari Capes Rowley Shoals | <ul style="list-style-type: none"> Shoalwater Islands Swan Estuary Swan Estuary - Alfred Cove Swan Estuary - Milyu Swan Estuary - Pelican Point Ningaloo (MP) Shark Bay (MP) |
|--------------------------------|---|---|--|--|

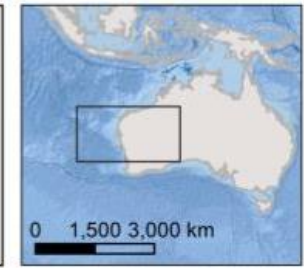


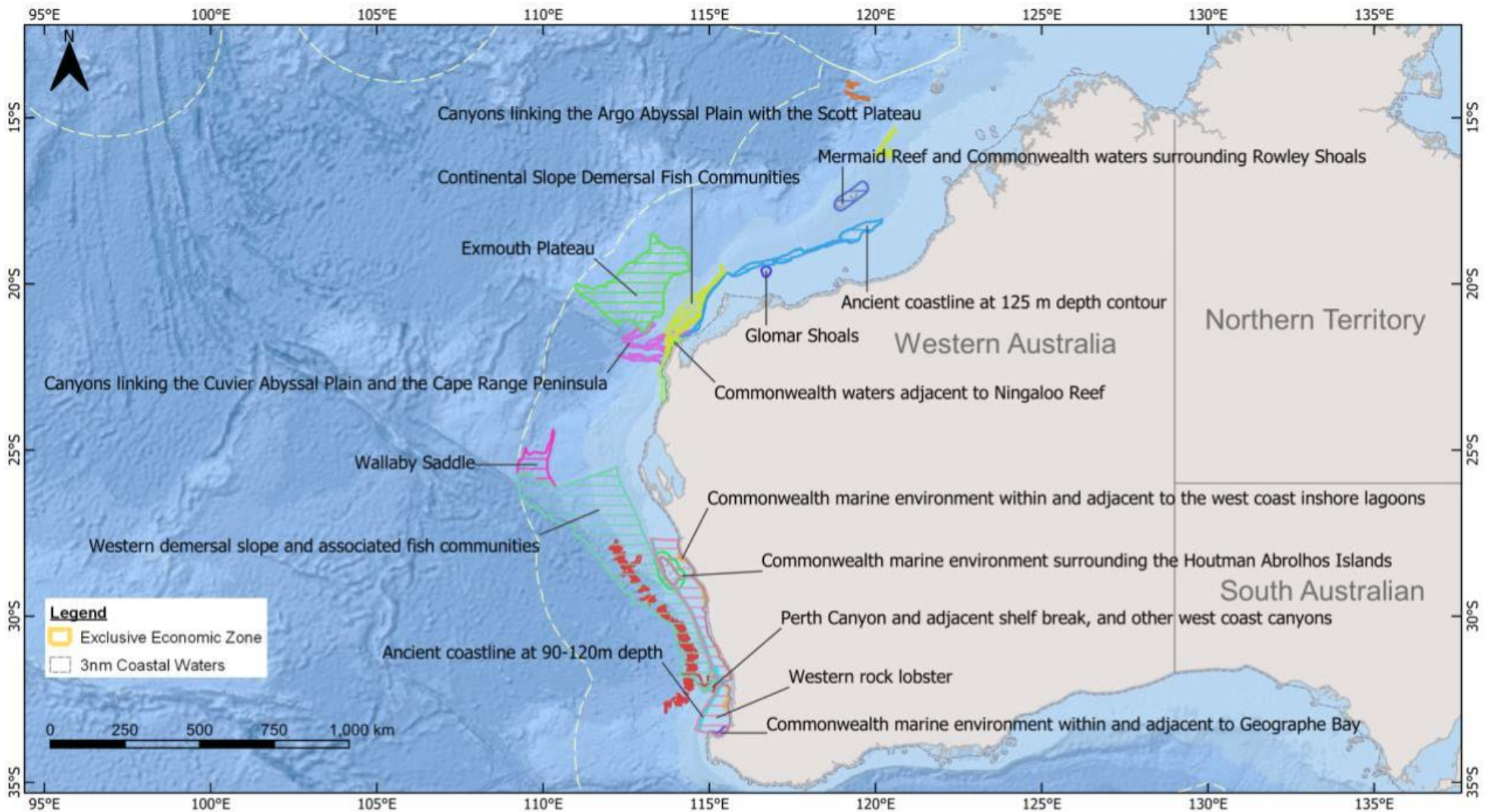


Receptor Map - Marine Management Areas and Nature Reserves

rps Coordinate System: GCS WGS 1984
 Datum: WGS 1984
 Units: Degree
 Date created: 09/29/2021

- | | | |
|------------------------------------|--------------------------------|------------------------|
| Marine Management Areas | Cervantes Islands | Ronsard Rocks |
| Barrow Island | Essex Rocks | Sandland Islands |
| Muiron Islands | Fisherman Islands | Shoalwater Bay Islands |
| Nature Reserves | Great Sandy Island | Thevenard Island |
| Beagle Islands | Lipfert, Milligan, Etc Islands | Whalebone Island |
| Buller, Whittell And Green Islands | Outer Rocks | |

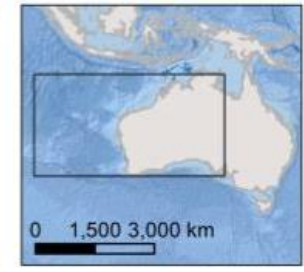


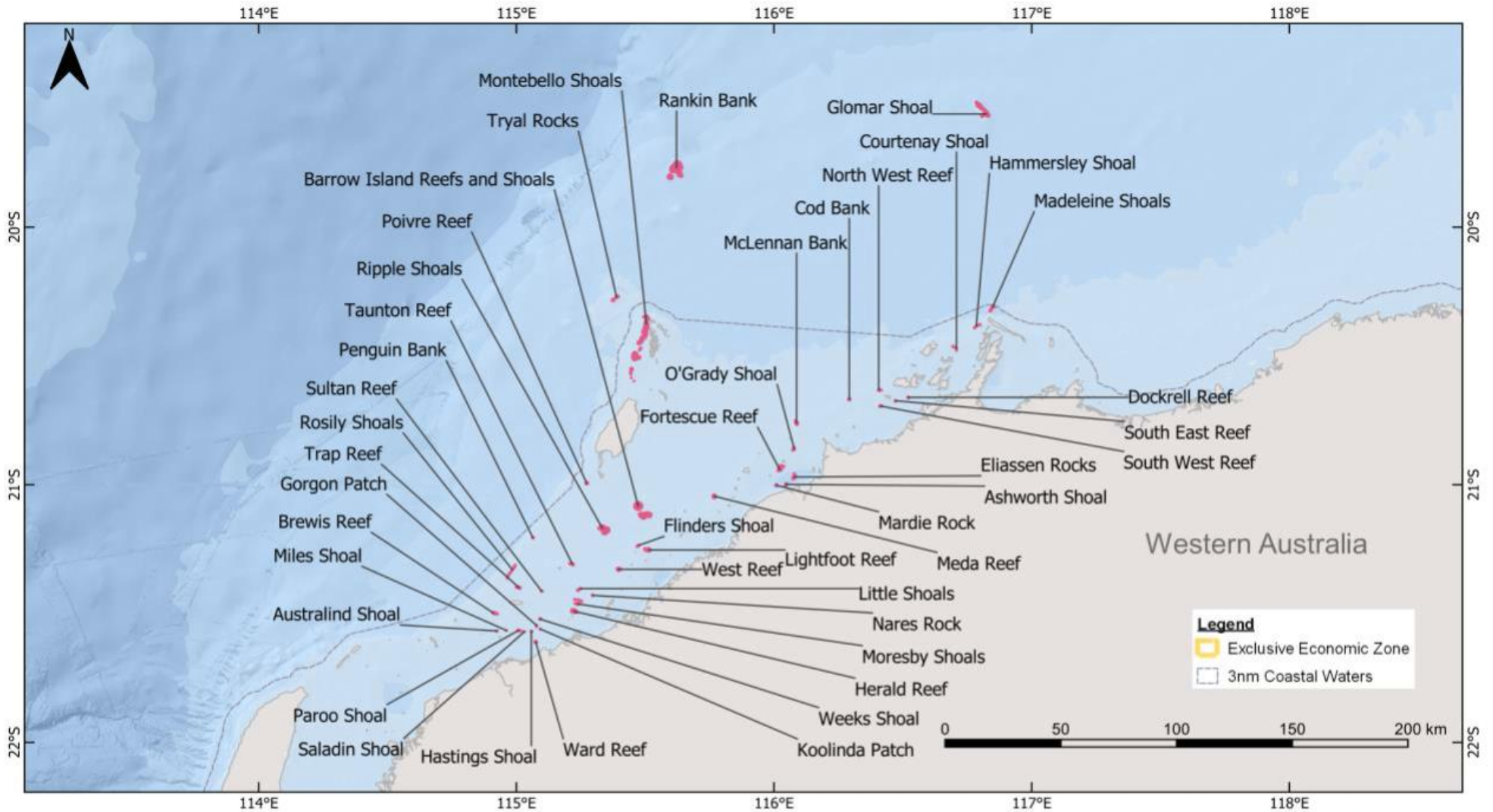


Receptor Map - Key Ecological Features

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Date created: 09/29/2021

<p>Key Ecological Features</p> <ul style="list-style-type: none"> Ancient coastline at 125 m depth contour Ancient coastline at 90-120m depth Canyons linking the Argo Abyssal Plain with the Scott Plateau Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula Commonwealth marine environment surrounding the Houtman Abrolhos Islands 	<ul style="list-style-type: none"> Commonwealth marine environment within and adjacent to Geographe Bay Commonwealth marine environment within and adjacent to the west coast inshore lagoons Commonwealth waters adjacent to Ningaloo Reef Continental Slope Demersal Fish Communities Exmouth Plateau Glomar Shoals 	<ul style="list-style-type: none"> Mermaid Reef and Commonwealth waters surrounding Rowley Shoals Perth Canyon and adjacent shelf break, and other west coast canyons Wallaby Saddle Western demersal slope and associated fish communities Western rock lobster
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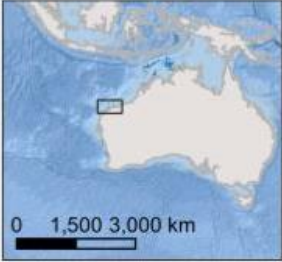


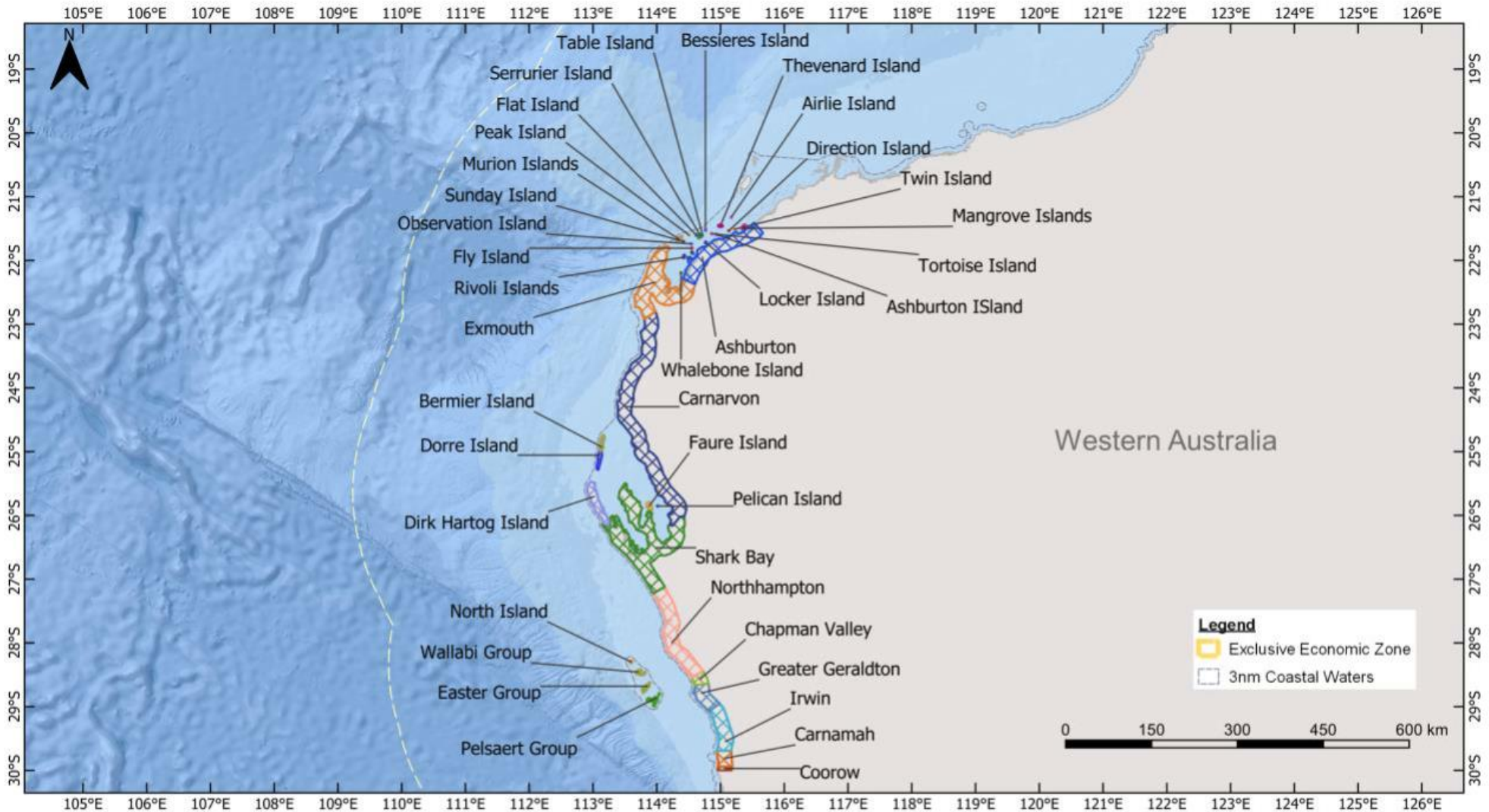


Receptor Map - Reefs, Shoals and Banks

■ Reef, Shoals and Banks

Coordinate System: GCS WGS 1984
 Datum: WGS 1984
 Units: Degree
 Date created: 09/30/2021



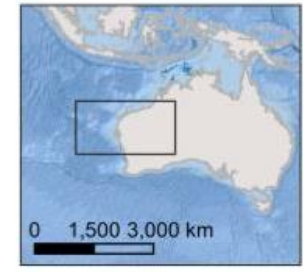


Receptor Map - Shoreline

Coordinate System: GCS WGS 1984
 Datum: WGS 1984
 Units: Degree
 Date created: 09/30/2021

Legend

Shoreline	Chapman Valley	Flat Island	Northhampton	Shark Bay
Airlie Island	Coorow	Fly Island	Observation Island	Sunday Island
Ashburton	Direction Island	Greater Geraldton	Peak Island	Table Island
Ashburton Island	Dirk Hartog Island	Irwin	Pelican Island	Thevenard Island
Bermier Island	Dorre Island	Locker Island	Pelsaert Group	Tortoise Island
Bessieres Island	Easter Group	Mangrove Islands	Rivoli Islands	Twin Island
Camamah	Exmouth	Murion Islands	Round Island	Wallabi Group
Carnarvon	Faure Island	North Island	Serrurier Island	Whalebone Island



Appendix H Environmental Monitoring Response Strategies

Appendix H – Operational and Scientific Monitoring

1 OPERATIONAL MONITORING ACTIVATION AND TERMINATION CRITERIA

Table H-1: Operational monitoring objectives, triggers and termination criteria

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan 1 (OM01)</p> <p>Predictive Modelling of Hydrocarbons to Assess Resources at Risk</p>	<p>OM01 focuses on the conditions that have prevailed since a spill commenced, as well as those that are forecasted in the short term (1–3 days ahead) and longer term. OM01 utilises computer-based forecasting methods to predict hydrocarbon spill movement and guide the management and execution of spill response operations to maximise the protection of environmental resources at risk.</p> <p>The objectives of OM01 are to:</p> <ul style="list-style-type: none"> • Provide forecasting of the movement and weathering of spilled hydrocarbons • Identify resources that are potentially at risk of contamination • Provide simulations showing the outcome of alternative response options (booming patterns etc.) to inform on-going Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP 	<p>OM01 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The criteria for the termination of OM01 are:</p> <ul style="list-style-type: none"> • The hydrocarbon discharge has ceased and no further surface oil is visible • Response activities have ceased • Hydrocarbon spill modelling (as verified by OM02 surveillance observations) predicts no additional natural resources will be impacted

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan 2 (OM02)</p> <p>Surveillance and reconnaissance to detect hydrocarbons and resources at risk</p>	<p>OM02 aims to provide regular, on-going hydrocarbon spill surveillance throughout a broad region, in the event of a spill.</p> <p>The objectives of OM02 are:</p> <ul style="list-style-type: none"> • Verify spill modelling results and recalibrate spill trajectory models (OM01). • Understand the behaviour, weathering and fate of surface hydrocarbons. • Identify environmental receptors and locations at risk or contaminated by hydrocarbons. • Inform ongoing Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP. • To aid in the subsequent assessment of the short- to long-term impacts and/or recovery of natural resources (assessed in SMPs) by ensuring that the visible cause and effect relationships between the hydrocarbon spill and its impacts to natural resources have been observed and recorded during the operational phase. 	<p>OM02 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The termination triggers for the OM02 are:</p> <ul style="list-style-type: none"> • 72 hours has elapsed since the last confirmed observation of surface hydrocarbons. • Latest hydrocarbon spill modelling results (OM01) do not predict surface exposures at visible levels.

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan 3 (OM03)</p> <p>Monitoring of hydrocarbon presence, properties, behaviour and weathering in water</p>	<p>OM03 will measure surface, entrained and dissolved hydrocarbons in the water column to inform decision-making for spill response activities.</p> <p>The specific objectives of OM03 are as follows:</p> <ul style="list-style-type: none"> • Detect and monitor for the presence, quantity, properties, behaviour and weathering of surface, entrained and dissolved hydrocarbons. • Verify predictions made by OM01 and observations made by OM02 about the presence and extent of hydrocarbon contamination. <p>Data collected in OM03 will also be used for the purpose of longer-term water quality monitoring during SM01.</p>	<p>OM03 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The criteria for the termination of OM03 are as follows:</p> <ul style="list-style-type: none"> • The hydrocarbon release has ceased. • Response activities have ceased. • Concentrations of hydrocarbons in the water are below available ANZECC/ ARMCANZ (2018) trigger values for 99% species protection.

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan 4 (OM04)</p> <p>Pre-emptive assessment of sensitive receptors at risk</p>	<p>OM04 aims to undertake a rapid assessment of the presence, extent and current status of shoreline sensitive receptors prior to contact from the hydrocarbon spill, by providing categorical or semi-quantitative information on the characteristics of resources at risk.</p> <p>The primary objective of OM04 is to confirm understanding of the status and characteristics of environmental resources predicted by OM01 and OM02 to be at risk, to further assist in making decisions on the selection of appropriate response actions and prioritisation of resources.</p> <p>Indirectly, qualitative/semi-quantitative pre-contact information collected by OM04 on the status of environmental resources may also aid in the verification of environmental baseline data and provide context for the assessment of environmental impacts, as determined through subsequent SMPs.</p> <p>OM04 would be undertaken in liaison with WA DoT as the control agency once the oil is in State Waters (if a Level 2/3 incident).</p>	<p>Triggers for commencing OM04 include:</p> <ul style="list-style-type: none"> • Contact of a sensitive habitat or shoreline is predicted by OM01, OM02 and/or OM03. • The pre-emptive assessment methods can be implemented before contact from hydrocarbons (once a receptor has been contacted by hydrocarbons it will be assessed under OM05). 	<p>The criteria for the termination of OM04 at any given location are:</p> <ul style="list-style-type: none"> • Locations predicted to be contacted by hydrocarbons have been contacted. • The location has not been contacted by hydrocarbons and is no longer predicted to be contacted by hydrocarbons (resources should be reallocated as appropriate).

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational monitoring operational plan 5 (OM05)</p> <p>Monitoring of contaminated resources</p>	<p>OM05 aims to implement surveys to assess the condition of wildlife and habitats contacted by hydrocarbons at sensitive habitat and shoreline locations.</p> <p>The primary objectives of OM05 are:</p> <ul style="list-style-type: none"> Record evidence of oiled wildlife (mortalities, sub-lethal impacts, number, extent, location) and habitats (mortalities, sub-lethal impacts, type, extent of cover, area, hydrocarbon character, thickness, mass and content) throughout the response and clean-up at locations contacted by hydrocarbons to inform and prioritise clean-up efforts and resources, while minimising the potential impacts of these activities. <p>Indirectly, the information collected by OM05 may also support the assessment of environmental impacts, as determined through subsequent SMPs.</p> <p>OM05 would be undertaken in liaison with WA DoT as the control agency once the oil is in State Waters (if a Level 2/3 incident).</p>	<p>OM05 will be triggered when a sensitive habitat or shoreline is predicted to be contacted by hydrocarbons by OM01, OM02 and/or OM03.</p>	<p>The criteria for the termination of OM05 at any given location are:</p> <ul style="list-style-type: none"> No additional response or clean-up of wildlife or habitats is predicted. Spill response and clean-up activities have ceased. <p>OM05 survey sites established at sensitive habitat and shoreline locations will continue to be monitored during SM02.</p> <p>The formal transition from OM05 to SM02 will begin on cessation of spill response and clean-up activities.</p>

2 OIL SPILL SCIENTIFIC MONITORING PROGRAM

Oil Spill Environmental Monitoring

The following provides some further detail on Woodside's oil spill scientific monitoring Program and includes the following:

- The organisation, roles and responsibilities of the Woodside oil spill scientific monitoring team and external resourcing.
- A summary table of the ten scientific monitoring programs as per the specific focus receptor, objectives, activation triggers and termination criteria.
- Details on the oil spill environmental monitoring activation and termination decision-making processes.
- Baseline knowledge and environmental studies knowledge access via geo-spatial metadata databases.
- An outline of the reporting requirements for oil spill scientific monitoring programs.

Oil Spill Scientific Monitoring – Delivery Team Roles and Responsibilities

Woodside Oil Spill Scientific Monitoring Delivery Team

The Woodside science team are responsible for the delivery of the oil spill scientific monitoring. The roles and responsibilities of the Woodside scientific monitoring delivery team are presented in Table H-1 and the organisational structure and Central Incident Management Team (CIMT) linkage provided in Figure H-1.

Woodside Oil Spill Scientific monitoring program – External Resourcing

In the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors, scientific monitoring personnel and scientific equipment to implement the appropriate SMPs will be provided by SMP Standby contractor who hold a standby contract for SMP via the Woodside Environmental Services Panel (ESP). In the event that additional resources are required other consultancy capacity within the Woodside ESP will be utilised (as needed and may extend to specialist contractors such as research agencies engaged in long-term marine monitoring programs). In consultation with the SMP Standby Contractor and/or specialist contractors, the selection, field sampling and approach of the SMPs will be determined by the nature and scale of the spill.

Table H-2: Woodside and Environmental Service Provider – Oil Spill Scientific Monitoring Program Delivery Team Key Roles and Responsibilities

Role	Location	Responsibility
Woodside Roles		
SMP Lead/Manager	Onshore	<ul style="list-style-type: none"> • Approves activated the SMPs based on operational monitoring data provided by the Planning Section • Provides advice to the CIMT in relation to scientific monitoring • Provides technical advice regarding the implementation of scientific monitoring • Approves detailed sampling plans prepared for SMPs • Directs liaison between statutory authorities, advisors and government agencies in relation to SMPs.
SMP Co-ordinator	Onshore	<ul style="list-style-type: none"> • Activates the SMPs based on operational monitoring data provided by the Planning Section • Sits in the Planning Section of the CIMT. • Liaises with other CIMT Sections to deliver required logistics, resources and operational support from Woodside to support the Environmental Service Provider in delivering on the SMPs. Acts as the conduit for advice from the SMP Lead/Manager to the Environmental Service Provider • Manages the Environmental Service Provider’s implementation of the SMPs • Liaises with the Environmental Service Provider on delivery of the SMPs • Arranges all contractual matters, on behalf of Woodside, associated with the Environmental Service Provider’s delivery of the SMPs.
Environmental Service Provider Roles		
SMP Standby Contractor – SMP Duty Manager/Project Manager (SMP Liaison Officer)	Onshore	<ul style="list-style-type: none"> • Coordinates the delivery of the SMPs • Provides costings, schedule and progress updates for delivery of SMPs • Determines the structure of the Environmental Service Provider’s team to necessitate delivery of the SMPs • Verifies that HSE Plans, detailed sampling plans and other relevant deliverables are developed and implemented for delivery of the SMPs • Directs field teams to deliver SMPs • Arranges all contractual matters, on behalf of Environmental Service Provider, associated with the delivery of the SMPs to Woodside • Manages sub-consultant delivery to Woodside • Provides required personnel and equipment to deliver the SMPs.
SMP Field Teams	Offshore – Monitoring Locations	<ul style="list-style-type: none"> • Delivers the SMPs in the field consistent with the detailed sampling plans and HSE requirements, within time and budget. • Early communication of time, budget, HSE risks associated with delivery of the SMPs to the Environmental Service Provider – Project Manager • Provides start up, progress and termination updates to the Environmental Service Provider – Project Manager (will be led in-field by a party chief).

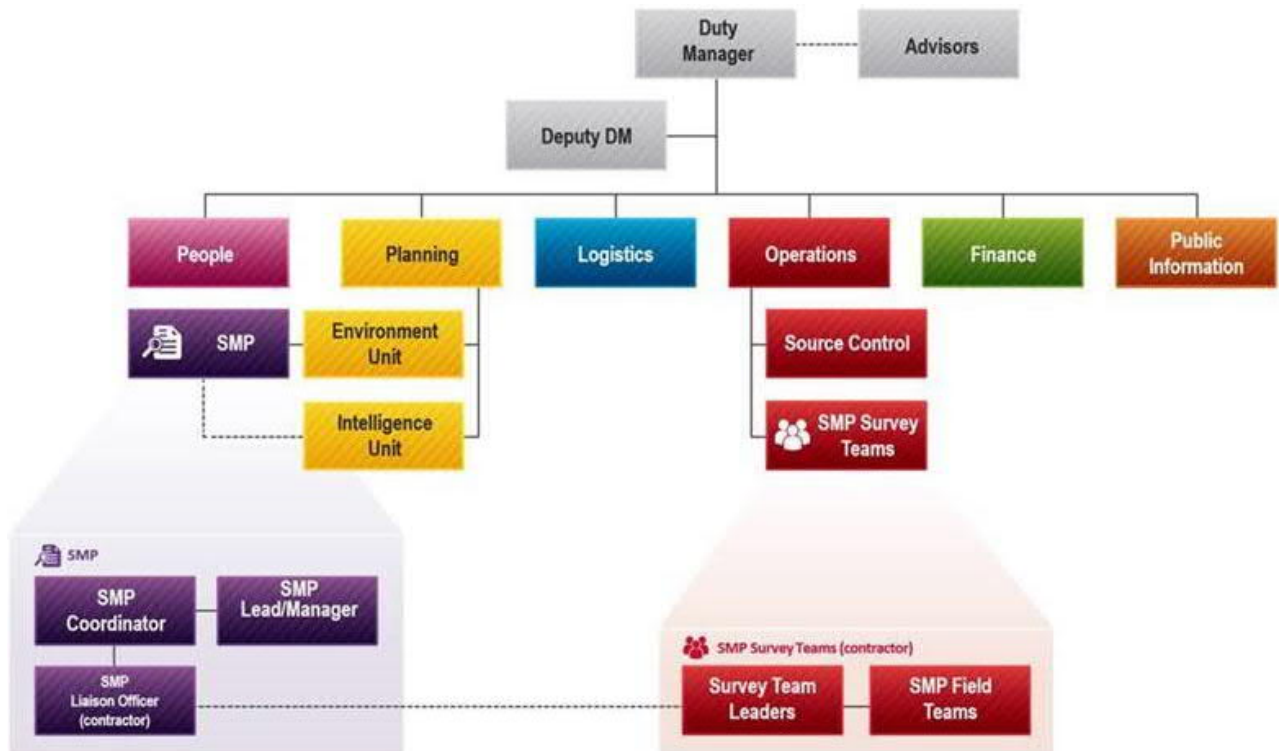


Figure H-1: Woodside Oil Spill Scientific Monitoring Program Delivery Team and Linkage to Corporate Incident Management Team (CIMT) organisational structure.

Table H-3: Oil Spill Environmental Monitoring: Scientific Monitoring Program – Objectives, Activation Triggers and Termination Criteria

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
Scientific monitoring program 1 (SM01) Assessment of Hydrocarbons in Marine Waters	SM01 will detect and monitor the presence, extent, persistence and properties of hydrocarbons in marine waters following the spill and the response. The specific objectives of SM01 are as follows: <ul style="list-style-type: none"> Assess and document the extent, severity and persistence of hydrocarbon contamination with reference to observations made during surveillance activities and / or in-water measurements made during operational monitoring; and Provide information that may be used to interpret potential cause and effect drivers for environmental impacts recorded for sensitive receptors monitored under other SMPs. 	SM01 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors	SM01 will be terminated when: <ul style="list-style-type: none"> Operational monitoring data relating to observations and / or measurements of hydrocarbons on and in water have been compiled, analysed and reported; and The report provides details of the extent, severity and persistence of hydrocarbons which can be used for analysis of impacts recorded for sensitive receptors monitored under other SMPs. SMP monitoring of sensitive receptor sites: <ul style="list-style-type: none"> Concentrations of hydrocarbons in water samples are below NOPSEMA guidance note (2019¹) concentrations of 1 g/m² for floating, 10 ppb for entrained and dissolved; and Details of the extent, severity and persistence of hydrocarbons from concentrations recorded in water have been documented at sensitive receptor sites monitored under other SMPs.
Scientific monitoring program 2 (SM02) Assessment of the Presence, Quantity and Character of Hydrocarbons in Marine Sediments	SM02 will detect and monitor the presence, extent, persistence and properties of hydrocarbons in marine sediments following the spill and the response. The specific objectives of SM02 are as follows: <ul style="list-style-type: none"> Determine the extent, severity and persistence of hydrocarbons in marine sediments across selected sites where hydrocarbons were observed or recorded during operational monitoring; and Provide information that may be used to interpret potential cause and effect drivers for environmental impacts recorded for sensitive receptors monitored under other SMPs. 	SM02 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows: <ul style="list-style-type: none"> Response activities have ceased; and Operational monitoring results made during the response phase indicate that shoreline, intertidal or sub-tidal sediments have been exposed to surface, entrained or dissolved hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation). 	SM02 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of: <ul style="list-style-type: none"> Concentrations of hydrocarbons in sediment samples are below ANZECC/ ARMCANZ (2013²) sediment quality guideline values (SQGVs) for biological disturbance; and Details of the extent, severity and persistence of hydrocarbons from concentrations recorded in sediments have been documented.
Scientific monitoring program 3 (SM03) Assessment of Impacts and Recovery of Subtidal and Intertidal Benthos	The objectives of SM03 are: <ul style="list-style-type: none"> Characterize the status of intertidal and subtidal benthic habitats and quantify any impacts to functional groups, abundance and density that may be a result of the spill; and Determine the impact of the hydrocarbon spill and subsequent recovery (including impacts associated with the implementation of response options). Categories of intertidal and subtidal habitats that may be monitored include: <ul style="list-style-type: none"> Coral reefs Seagrass Macro-algae Filter-feeders SM03 will be supported by sediment contamination records (SM02) and characteristics of the spill derived from OMPs.	SM03 will be activated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows: <ul style="list-style-type: none"> As part of a pre-emptive assessment of PBAs of receptor locations identified by time to hydrocarbon contact >10 days, to target receptors and sites where it is possible to acquire pre-hydrocarbon contact baseline; and Operational monitoring identified shoreline potential contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) for subtidal and intertidal benthic habitat. 	SM03 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of: <ul style="list-style-type: none"> Overall impacts to benthic habitats from hydrocarbon exposure have been quantified. Recovery of impacted benthic habitats has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
Scientific monitoring program 4 (SM04) Assessment of Impacts and Recovery of Mangroves / Saltmarsh	The objectives of SM04 are: <ul style="list-style-type: none"> Characterize the status of mangroves (and associated salt marsh habitat) at shorelines exposed/contacted by spilled hydrocarbons; Quantify any impacts to species (abundance and density) and mangrove/saltmarsh community structure; and Determine and monitor the impact of the hydrocarbon spill and potential subsequent recovery (including impacts associated with the implementation of response options). 	SM04 will be activated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows: <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; and 	SM04 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of: <ul style="list-style-type: none"> Impacts to mangrove and saltmarsh habitat from hydrocarbon exposure have been quantified. Recovery of impacted mangrove/saltmarsh habitat has been evaluated.

¹ NOPSEMA (2019) Bulletin #1 – Oil spill modelling – April 2019, <https://www.nopsema.gov.au/assets/Bulletins/A652993.pdf>

² Simpson SL, Batley GB and Chariton AA (2013). Revision of the ANZECC/ARMCANZ Sediment Quality Guidelines. CSIRO and Water Science Report 08/07. Land and Water, pp. 132.

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
	<p>SM03 will be supported by sediment sampling undertaken in SM02 and characteristics of the spill derived from OMPs.</p>	<ul style="list-style-type: none"> Operational monitoring identified shoreline potential contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) for mangrove/saltmarsh habitat. 	<ul style="list-style-type: none"> Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 5 (SM05) Assessment of Impacts and Recovery of Seabird and Shorebird Populations</p>	<p>The Objectives of SM05 are to:</p> <ul style="list-style-type: none"> Collate and quantify impacts to avian wildlife from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population level; and Undertake monitoring to quantify and assess impacts of hydrocarbon exposure to seabirds and shorebird populations at targeted breeding colonies / staging sites / important coastal wetlands where hydrocarbon contact was recorded. 	<p>SM05 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Operational monitoring predicts shoreline contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at important bird colonies / staging sites / important coastal wetland locations; or Records of dead, oiled or injured bird species made during the hydrocarbon spill or response. 	<p>SM05 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Impacts to seabird and shorebird populations from hydrocarbon exposure have been quantified. Recovery of impacted seabird and shorebird populations has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 6 (SM06) Assessment of Impacts and Recovery of Nesting Marine Turtle Populations</p>	<p>The objectives of SM06 are to:</p> <ul style="list-style-type: none"> To quantify impacts of hydrocarbon exposure or contact on marine turtle nesting populations (including impacts associated with the implementation of response options); Collate and quantify impacts to adult and hatchling marine turtles from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population levels (including impacts associated with the implementation of response options); .and Undertake monitoring to quantify and assess impacts of hydrocarbon exposure to nesting marine turtle populations at known rookeries (including impacts associated with the implementation of response options). 	<p>SM06 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring has:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Predicted shoreline contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at known marine turtle rookery locations; or Records of dead, oiled or injured marine turtle species made during the hydrocarbon spill or response. 	<p>SM06 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Impacts to nesting marine turtle populations from hydrocarbon exposure have been quantified. Recovery of impacted nesting marine turtle populations has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 7 (SM07) Assessment of Impacts to Pinniped Colonies including Haul-out Site Populations</p>	<p>The objectives of SM07 are to:</p> <ul style="list-style-type: none"> Quantify impacts on pinniped colonies and haul-out sites as a result of hydrocarbon exposure/contact. Collate and quantify impacts to pinniped populations from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population levels. 	<p>SM07 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring has:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Identified shoreline contact of hydrocarbons ((at or above 0.5 g/m² surface, ≥5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at known pinniped colony or haul-out site(s) (i.e. most northern site is the Houtman Abrolhos Islands); or Records of dead, oiled or injured pinniped species made during the hydrocarbon spill or response. 	<p>SM07 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Impacts to pinniped populations from hydrocarbon exposure have been quantified. Recovery of pinniped populations has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
<p>Scientific monitoring program 8 (SM08) Desk-Based Assessment of Impacts to Other Non-Avian Marine Megafauna</p>	<p>The objective of SM08 is to provide a desk-based assessment which collates the results of OM02 and OM05 where observations relate to the mortality, stranding or oiling of mobile marine megafauna species not addressed in SM06 or SM07, including:</p> <ul style="list-style-type: none"> • Cetaceans; • Dugongs; • Whale sharks and other shark and ray populations; • Sea snakes; and • Crocodiles. <p>The desk-based assessment will include population analysis to infer potential impacts to marine megafauna species populations.</p>	<p>SM08 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring reports records of dead, oiled or injured non-avian marine megafauna during the spill/ response phase.</p>	<p>SM08 will be terminated when the results of the post-spill monitoring have quantified impacts to non-avian megafauna.</p> <ul style="list-style-type: none"> • Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 9 (SM09) Assessment of Impacts and Recovery of Marine Fish associated with SM03 habitats</p>	<p>The objectives of SM09 are:</p> <ul style="list-style-type: none"> • Characterise the status of resident fish populations associated with habitats monitored in SM03 exposed/contacted by spilled hydrocarbons; • Quantify any impacts to species (abundance, richness and density) and resident fish population structure (representative functional trophic groups); and • Determine and monitor the impact of the hydrocarbon spill and potential subsequent recovery (including impacts associated with the implementation of response options). 	<p>SM09 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented with SMO3.</p>	<p>SM09 will be undertaken and terminated concurrent with monitoring undertaken for SM03, as per the SMP termination criteria process</p> <ul style="list-style-type: none"> • Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 10 (SM10) SM10 - Assessment of physiological impacts important fish and shellfish species (fish health and seafood quality/safety) and recovery</p>	<p>SM10 aims to assess any physiological impacts to important commercial fish and shellfish species (assessment of fish health) and if applicable, seafood quality/safety. Monitoring will be designed to sample key commercial fish and shellfish species and analyse tissues to identify fish health indicators and biomarkers, for example:</p> <ul style="list-style-type: none"> • Liver Detoxification Enzymes (ethoxyresorufin-O-deethylase (EROD) activity) • PAH Biliary Metabolites • Oxidative DNA Damage • Serum SDH • Other physiological parameters, such as condition factor (CF), liver somatic index (LSI), gonado-somatic index (GSI) and gonad histology, total weight, length, condition, parasites, egg development, testes development, abnormalities. <p>Seafood tainting may be included (where appropriate) using applicable sensory tests to objectively assess targeted finfish and shellfish species for hydrocarbon contamination. Results will be used to make inferences on the health of commercial fisheries and the potential magnitude of impacts to fishing industries.</p>	<p>SM10 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring (OM01, OM02 and OM05) indicates the following:</p> <ul style="list-style-type: none"> • The hydrocarbon spill will or has intersected with active commercial fisheries or aquaculture activities. • Commercially targeted finfish and/or shellfish mortality has been observed/recorded. • Commercial fishing or aquaculture areas have been exposed to hydrocarbons ($\geq 0.5 \text{ g/m}^2$ surface and $\geq 5 \text{ ppb}$ for entrained/dissolved hydrocarbons); and • Taste, odour or appearance of seafood presenting a potential human health risk is observed. 	<p>SM10 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> • Physiological impacts to important commercial fish and shellfish species from hydrocarbon exposure have been quantified. • Recovery of important commercial fish and shellfish species from hydrocarbon exposure has been evaluated. • Impacts to seafood quality/safety (if applicable) have been assessed and information provided to the relevant stakeholders and regulators for the management of any impacted fisheries. • Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.

Activation Triggers and Termination Criteria

Scientific monitoring program activation

The Woodside oil spill scientific monitoring team will be stood up immediately with the occurrence of a hydrocarbon spill (actual or suspected) Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors via the First Strike plan for the petroleum activity programme. The presence of any level of hydrocarbons in the marine environment triggers the activation of the oil spill scientific monitoring program (SMP). This is to ensure the full range of eventualities relating to the environmental, socio-economic and health consequences of the spill are considered in the planning and execution of the SMP. The activation process also takes into consideration the management objectives, species recovery plans, conservation advices and conservations plans for any World Heritage Area (WHA), AMPs, State Marine Parks, other protected area designations (e.g., State nature reserves) and Matters of National Environmental Significance (including listed species under part 3 of the EPBC Act) potentially exposed to hydrocarbons. With the first 24-48 hours of a spill event, such information will be sourced and evaluated as part of the SMP planning process guided by Appendix D (identified receptors vulnerable to hydrocarbon contact), the information presented in the Existing Environment section of the EP as well as other information sources such as the Woodside Baseline Environmental Studies Database.

The starting point for decision-making on which SMPs are activated, and the spatial extent of monitoring activities, will be based on the predictive modelling results (OM01) in the first 24-48 hours until more information is made available from other operational monitoring activities such as aerial surveillance and shoreline surveys. Pre-emptive Baseline Areas (WHA, AMPs and State Marine Parks encompassing key ecological and socio-economic values) are a key focus of the SMP activation decision-making process, particularly, in the early spill event/response phase. As the operational monitoring progresses and further situational awareness information becomes available, it will be possible to understand the nature and scale of the spill. The SMP activation and implementation decision-making will be revisited on a daily basis to account for the updates on spill information. One of the priority focus areas in the early phase of the incident will be to identify and execute pre-emptive SMP assessments at key receptor locations, as required. The SMP activation and implementation decision tree is presented in Figure H-2.

Scientific monitoring program termination

The basis of the termination process for the active SMPs (SMPs 1-10) will include quantification of impacts, evaluation of recovery for the receptor at risk and consultation with relevant authorities, persons and organisations. Termination of each SMP will not be considered until the results (as presented in annual SMP reports for the duration of each program) indicate that the target receptor has returned to pre-spill condition.

Once the SMP results indicate impacted receptor(s) have returned to pre-spill condition (as identified by Woodside) a termination decision-making process will be triggered and a number of steps will be undertaken as follows:

- Woodside will engage expert opinion on whether the receptor has returned to pre-spill condition (based on monitoring data). Subject Matter Expert (SMEs) will be engaged (via the Woodside SME scientific monitoring terms of reference) to review program outcomes, provide expert advice and recommendations for the duration of each SMP.
- Where expert opinion agrees that the receptor has returned to pre-spill condition, findings will then be presented to the relevant authorities, persons and organisations (as defined by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulation 11A). Stakeholder identification, planning and engagement will be managed by Woodside's Public Information Functional Support Team (FST) and follow the stakeholder management FST guidelines. These guidelines outline the FST roles and responsibilities, competencies, stakeholder communications and planning processes. An

assessment of the merits of any objection to termination will be documented in the SMP final report.

- Woodside will decide on termination of SMP based on expert opinion and merits of any stakeholder objections. The final report following termination will include: monitoring results, expert opinion and stakeholder consultation including merits of any objections.
- Termination of SMPs will also consider applicable management objectives, species recovery plans, conservation advices and conservations plans for any World Heritage Area (WHA), AMPs, State Marine Parks, other protected area designations (e.g., State nature reserves) and Matters of National Environmental Significance (including listed species under part 3 of the EPBC Act).

The SMP termination decision-making process will be applied to each active SMP and an iterative process of decision steps continued until each SMP has been terminated (refer to decision-tree diagram for SMP termination criteria, Figure H-3).

SMP ACTIVATION & IMPLEMENTATION DECISION PROCESS

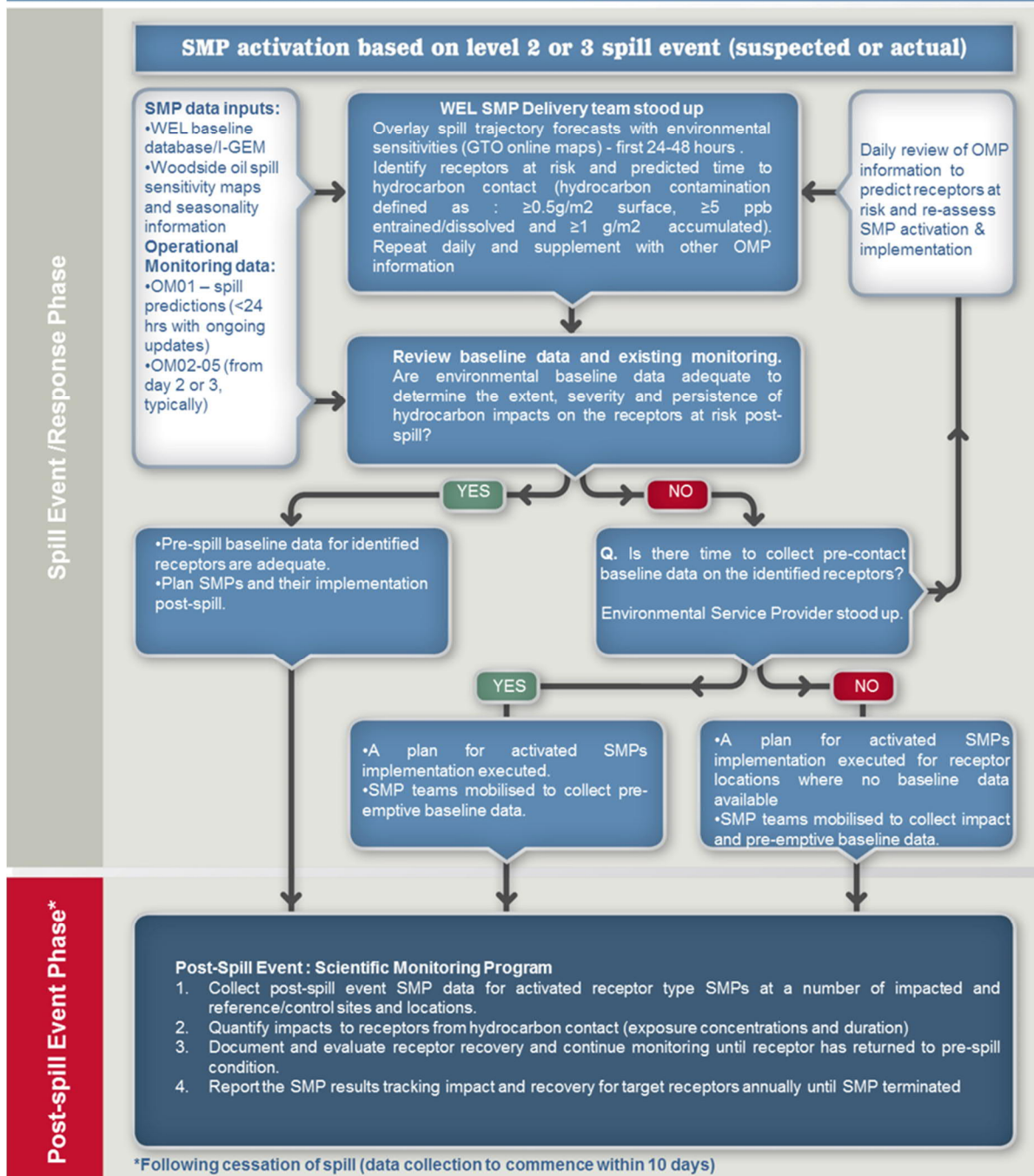


Figure H-2: Activation and Implementation Decision-tree for Oil Spill Environmental Monitoring

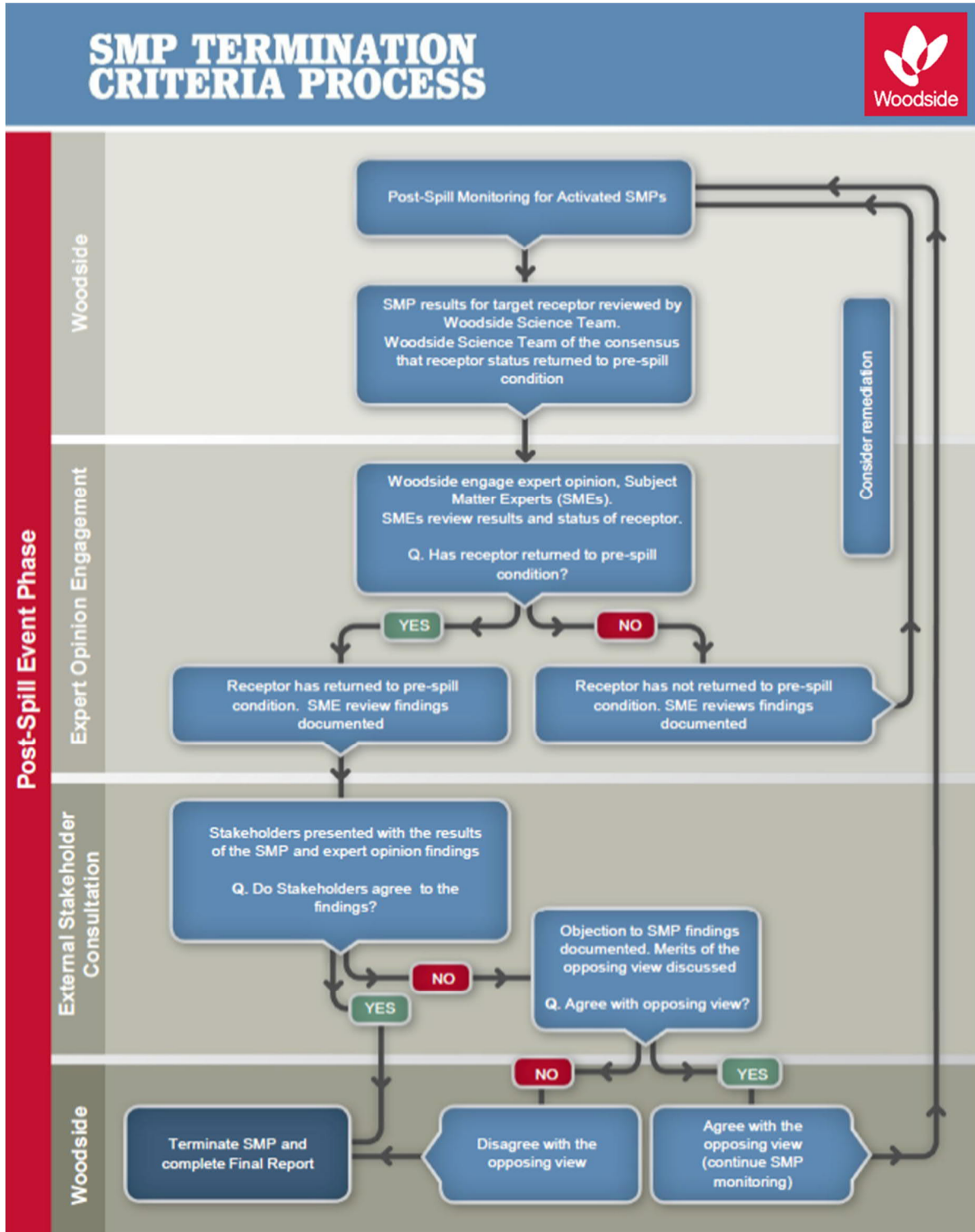


Figure H-3: Termination Criteria Decision-tree for Oil Spill Environmental Monitoring

Receptors at Risk and Baseline Knowledge

In order to assess the baseline studies available and suitability for oil spill scientific monitoring, Woodside maintains knowledge of environmental baseline studies through the upkeep and use of its Environmental Knowledge Management System.

Woodside's Environmental Knowledge Management System is a centralised platform for scientific information on the existing environment, marine biodiversity, Woodside environmental studies, key environmental impact topics, key literature and web-based resources. The system comprises a number of data directories and an environmental baseline database, as well as folders within the 'Corporate Environment' server space. The environmental baseline database was set up to support Woodside's SMP preparedness and as a SMP resource in the event of an unplanned hydrocarbon spill. The environmental baseline database is subject to updates including annual reviews completed as part of SMP standby contract. This database is accessed pre-PAP to identify Pre-emptive Baseline Areas (PBAs) where hydrocarbon contact is predicted to occur <10 days.

In addition to Woodside's Environmental Knowledge Management System, it is acknowledged that many relevant baseline datasets are held by other organisations (e.g. other oil and gas operators, government agencies, state and federal research institutions and non-governmental organisations). In order to understand the present status of environmental baseline studies a spatial environmental metadata database for Western Australia (Industry-Government Environmental Metadata, I-GEM) was established. IGEM is a collaboration comprising oil and gas operators (including Woodside), government and research agencies and other organisations. IGEM held data were integrated into the Department of Water and Environmental Regulation (WA) Index of Marine Surveys for Assessment (IMSA)³ in 2020. The Index of Marine Surveys for Assessments (IMSA) is an online portal for information about marine-based environmental surveys in Western Australia. IMSA is a project of the Department of Water and Environmental Regulation (the department) for the systematic capture and sharing of marine data created as part of an environmental impact assessment (EIA).

In the event of an unplanned hydrocarbon release, Woodside intends to interrogate the information on baseline studies status as held by the various databases (e.g. Woodside Environmental Knowledge Management System, IMSA and other sources of existing baseline data) to identify Pre-emptive Baseline Areas (PBAs), i.e., receptors at risk where hydrocarbon contact is predicted to be >10 days, and baseline data can be collected before hydrocarbon contact.

Reporting

For the scientific monitoring program relevant regulators will be provided with:

- Annual reports summarising the SMPs deployed and active, data collection activities and available findings; and
- Final reports for each SMP summarising the quantitative assessment of environmental impacts and recovery of the receptor once returned to pre-spill condition and termination of the monitoring program.

The reporting requirements of the scientific monitoring program will be specific to the individual SMPs deployed and terms of responsibilities, report templates, schedule, Quality Assurance/Quality Control (QA/QC) and peer-review will be agreed with the contractors engaged to conduct the SMPs. Compliance and auditing mechanisms will be incorporated into the reporting terms.

³ <https://biocollect.ala.org.au/imsa#max%3D20%26sort%3DdateCreatedSort>

3 SCIENTIFIC MONITORING PROGRAM AND BASELINE STUDIES FOR THE PETROLEUM ACTIVITIES PROGRAM

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal (Pilbara Offshore)
<p>Benthic Habitat (Coral Reef)</p>	<p>SM03 Quantitative assessment using image capture using either diver held camera or towed video. Post analysis into broad groups based on taxonomy and morphology.</p>	<p>Studies:</p> <ol style="list-style-type: none"> 1. DBCA LTM Ningaloo Reef program: 1991-ongoing. 2. AIMS/DBCA 2014 Baseline Ningaloo and Muiron Islands Survey – repeat and expansion on the LTM (Co-funded survey: Woodside and AIMS). 3. Pilbara Marine Conservation Partnership. 4. WAMSI LTM Study: Ningaloo Research node: 2009 -10 over the length of Ningaloo reef system (with a focus on coral and fish recruitment). 5. Ningaloo Outlook (CSIRO) - Shallow and Deep Reefs Program (2015-ongoing). 6. Ningaloo Collaboration Cluster: Habitats of the Ningaloo Reef and adjacent coastal areas determined through hyperspectral imagery 7. Allen Coral Atlas <p>Methods:</p> <ol style="list-style-type: none"> 1. LTM transects, diver based (video) photo quadrats, specimen collection. 2. LTM sites, transects, diver-based video quadrat. 3. Diver video transects, still photography, video and in situ visual estimates from transects, quadrats, manta-tows, towed video and ROV. 4. Video point intercept transects recorded by towed video or diver hand-held video camera. 5. Video transects. 6. LTM transects, diver based (video) photo quadrat. 7. Combination of satellite imagery analysis and mapped/monitored areas. <p>References and Data:</p> <ol style="list-style-type: none"> 1. DBCA unpublished data. DATAHOLDER: DBCA 2. AIMS 2015. DATAHOLDER: AIMS. 3. Pilbara Marine Conservation Partnership DATAHOLDER: CSIRO 4. Depczynski et al. 2011 DATAHOLDER: AIMS, DBCA and WAMSI. 5. CSIRO 2019 – Ningaloo Outlook Program 6. Murdoch University – HyVista Corporation – April and May 2006 (Kobryn et al. 2013 and 2022) 7. https://allencoralatlas.org/atlas/#7.58/-21.5563/114.9133 (accessed 18/05/2022) 	<ol style="list-style-type: none"> 1. Glomar Shoal and Rankin Bank Environmental Survey Report, 2013, quantitatively surveyed benthic habitats and communities. AIMS report to Woodside. Scientific Publication - Biodiversity and spatial patterns of benthic habitat and associated demersal fish communities at two tropical submerged reef ecosystems, 2018. 2. Rankin Bank Environmental Survey Extension, 2014, Habitat assessment of an area southeast of Rankin Bank. 3. Glomar Shoal and Rankin Bank surveys, 2017. GWF-2 Monitoring Programme. Quantitatively surveyed benthic habitats and communities. 4. Temporal Studies survey of Rankin Bank and Glomar Shoal, 2018. <ol style="list-style-type: none"> 1. Towed video transects, photo quadrats using towed video system. 2. Towed video transects, photo quadrats using towed video system. 3. Towed video transects, photo quadrats using towed video system. 4. Towed video transects, photo quadrats using towed video system. <ol style="list-style-type: none"> 1. AIMS 2014a and Abdul Wahab et al., 2018. DATAHOLDER: AIMS. 2. AIMS 2014b. DATAHOLDER: AIMS. 3. Currey-Randall et. al., 2019. DATAHOLDER: AIMS 4. Currey-Randall et. al., 2019 and Jones et al. 2021. DATAHOLDER: AIMS
<p>Benthic Habitat (Seagrass and Macro-algae)</p>	<p>SM03 Quantitative assessment using image capture using either diver held camera or towed video. Post analysis into broad groups based on taxonomy and morphology.</p>	<p>Studies:</p> <ol style="list-style-type: none"> 1. Quantitative descriptions of Ningaloo sanctuary zones habitat types including lagoon and offshore areas – Cassata and Collins (2008). 2. CSIRO/BHP Ningaloo Outlook Program. 3. Ningaloo Collaboration Cluster: Habitats of the Ningaloo Reef and adjacent coastal areas determined through hyperspectral imagery. 4. Australian Institute of Marine Science – CReefs: Ningaloo Reef Biodiversity Expeditions (2008-2010). 5. Combination of satellite imagery analysis and mapped/monitored areas <p>Methods:</p>	

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal (Pilbara Offshore)
		1. Video transects to ground truth aerial photographs and satellite imagery. 2. Diver video transects. 3. LTM transects, diver based (video) photo quadrat. 4. LTM transects, diver based (video) photo quadrats, specimen collection. 5. Satellite imagery, mapping and monitoring References and Data: 1. Cassata and Collins 2008. DATAHOLDER: Curtin University – Applied Geology. 2. CSIRO – Ningaloo Outlook Program 3. AIMS - AIMS (2010) - http://www.aims.gov.au/creefs 4. Murdoch University - HyVista Corporation – April and May 2006 (Kobryn et al. 2013 and 2022) 5. https://allencoralatlas.org/atlas/#7.58/-21.5563/114.9133 (accessed 18/05/2022)	
Benthic Habitat (Deeper Water Filter Feeders)	SM03 Quantitative assessment using image capture using towed video. Post analysis into broad groups based on taxonomy and morphology.	Studies: 1. WAMSI 2007 deep-water Ningaloo benthic communities' study, Colquhoun and Heyward (2008). 2. CSIRO/BHP Ningaloo Outlook Program - Deep reef themes 2020 Methods: 1. Towed video and benthic sled (specimen sampling). 2. Side-scan sonar and AUV transects. References and Data: 1. Colquhoun and Heyward (eds) 2008. DATAHOLDER: WAMSI, AIMS. 2. CSIRO – Ningaloo Outlook 2020	As above (SM03 Coral Reefs)
Mangroves and Saltmarsh	SM04 Aerial photography and satellite imagery will be used in conjunction with field surveys to map the range and distribution of mangrove communities.	Studies: 1. Atmospheric corrected land cover classification, NW Cape. 2. Woodside hold Rapid Eye imagery of the Ningaloo Reef and coastal area. 3. Hyperspectral survey (2006) of Ningaloo Reef and coastal area (not yet analysed for Mangroves). 4. North West Cape sensitivity mapping 2012 included Mangrove Bay. 5. Global mangrove distribution as mapped by the USGS and located on UNEP's Ocean Data viewer. Methods: 1. Modular Inversion Program. May 2017 2. Rapid Eye imagery – High resolution satellite imagery from October/November/December 2011 and 2017. 3. Remote sensing – acquisition of HyMap airborne hyperspectral imagery and ground truthing data collection. 4. Reconnaissance surveys of the shorelines of the North West Cape and Muiron Islands. 5. Remote sensing study of global mangrove coverage. References and Data:	N/A – See Table D-1

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal (Pilbara Offshore)
		1. EOMAP 2017 DATAHOLDER: Woodside. 2. AAM 2014. Dataholder: Woodside 3. Kobryn et al. 2013 and 2022. DATAHOLDER: Murdoch University, AIMS; Woodside. 4. Joint Carnarvon Basin Operators, 2012. DATAHOLDER: Woodside and Apache Energy Ltd. 5. http://data.unep-wcmc.org/	
Seabirds	SM05 Visual counts of breeding seabirds, nest counts, intertidal bird counts at high tide.	Studies: 1. LTM Study of marine and shoreline birds: 1970-2011. 2. LTM of shorebirds within the Ningaloo coastline (Shorebirds 2020). 3. Exmouth Sub-basin Marine Avifauna Monitoring Program (Quadrant Energy/Santos). 4. Seabird and Shorebird baseline studies, Ningaloo Region – Report on January 2018 bird surveys. 5. Wedge-tailed shearwater foraging behaviour in the Exmouth Region – Final Report Methods: 1. Counts of nesting areas, counts of intertidal zone during high tide. 2. The Shorebirds 2020 database comprises the most complete shorebird count data available in Australia. The data have been collected by volunteer counters and BirdLife Australia staff for approximately 150 roosting and feeding sites, mainly in coastal Australia. The data go back as far as 1981 for key areas. 3. The Exmouth Sub-basin Marine Avifauna Monitoring Program undertook a detailed assessment of seabird and shorebird use in the Exmouth Sub-basin. Four aerial surveys and four island surveys were conducted between February 2013 and January 2015 for this Program, inclusive of the mainland coasts, of shore islands and a 2,500 km ² area of ocean adjacent to the Exmouth Sub-basin. 4. Shorebird counts, Shearwater Burrow Density. 5. Telemetry (GPS & Satellite). References and Data: 1. Johnstone et al. 2013. DATAHOLDER: WA MUSEUM. AMOSC/DBCA (DPaW) 2014. 2. BirdLife Australia DATAHOLDER: Woodside and BirdLife Australia 3. Surman & Nicholson 2015. 4. BirdLife Australia: DATAHOLDER: Woodside 5. Cannel et al. 2019 DATAHOLDER: UWA and BirdLife Australia	N/A – See Table D-1
Turtles	SM06	Studies:	

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal (Pilbara Offshore)
	Beach surveys (recording species, nests, and false crawls).	<ol style="list-style-type: none"> 1. Exmouth Islands Turtle Monitoring Program. 2. Ningaloo Turtle Program 3. Turtle activity and nesting on the Muiron Islands and Ningaloo Coast (2018). 4. Spatial and temporal use of inter-nesting habitat by sea turtles along the Muiron Islands and Ningaloo Coast – 2018-2019 <p>Methods:</p> <ol style="list-style-type: none"> 1. Astron (on behalf of Santos) to address a gap in the knowledge of turtle numbers at key locations (offshore islands within the region) that are not currently part of an existing monitoring programs (e.g. the NTP). Field surveys were conducted in October 2013 and January 2014. Surveys were conducted on 12 islands, with each island surveyed once (with the exception of Beach 8 at North Muiron Island) and all tracks counted. 2. Long term trends in marine turtle populations, beach surveys, track counts, best location, mortality counts. 3. On-beach monitoring and aerial surveys. 4. Tagging (satellite transmitter), analysis of internesting, migration and foraging grounds movements and behaviour. <p>References/Data:</p> <ol style="list-style-type: none"> 1. Santos – Report. 2. NTP Annual Reports DATAHOLDERS: DBCA. Reports available at http://www.ningalooturtles.org.au/media_reports.html 3. Rob et al. 2019 DATAHOLDER: DBCA 4. Tucker et al. 2019 DATAHOLDER: DBCA 	N/A – See Table D-1
Fish	SM09 Baited Remote Underwater Video Stations (BRUVS), Visual Underwater Counts (VUC), Diver Operated Video (DOV).	<p>Studies:</p> <ol style="list-style-type: none"> 1. AIMS/DBCA 2014 Baseline Ningaloo Survey – repeat and expansion on the LTM (Co-funded survey: Woodside and AIMS). 2. Demersal fish populations – baseline assessment (AIMS/WAMSI). 3. DBCA study measured Species Richness, Community Composition, and Target Biomass, through UVC. BRUVS studies determining max N, Species Richness, and Biomass. 4. Pilbara Marine Conservation Partnership Stereo BRUVS in shallow water (~10m) in 2014 in northern region of the Ningaloo Marine Park, in shallow water (~10m) inside the lagoonal reef of the Ningaloo Marine Park in 2016, in deep water (~40m) across the length of the Ningaloo Marine Park in 2015, in shallow water outside of Ningaloo Reef from Waroora to Jurabi in 2015 and offshore of the Muiron Islands in 2015. 5. Elasmobranch faunal composition of Ningaloo Marine Park. 6. Juvenile fish recruitment surveys at Ningaloo reef. 7. Demersal fish assemblage sampling method comparison 8. Ningaloo Outlook (CSIRO) - Shallow and Deep Reefs Program <p>Methods:</p>	<ol style="list-style-type: none"> 1. Glomar Shoal and Rankin Bank Environmental Survey Report, 2013, quantitatively surveyed benthic habitats and communities. AIMS report to Woodside. Scientific Publication - Biodiversity and spatial patterns of benthic habitat and associated demersal fish communities at two tropical submerged reef ecosystems, 2018. 2. Rankin Bank Environmental Survey Extension, 2014, Habitat assessment of an area southeast of Rankin Bank. 3. Glomar Shoal and Rankin Bank surveys, 2017. GWF-2 Monitoring Programme. Quantitatively surveyed benthic habitats and communities. 4. Temporal Studies survey of Rankin Bank and Glomar Shoal, 2018.

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal (Pilbara Offshore)
		<ol style="list-style-type: none"> 1. UVC surveys. 2. BRUVS Study with 304 video samples at three specific depth ranges (1-10 m, 10-30 m and 30-110m). 3. UVC surveys. 4. Stereo BRUVS 5. Snorkel and Scuba surveys. 5. Underwater visual census. 6. Diver operated video. 7. Diver UVC. 8. Diver UVC, stereo BRUVs 	<ol style="list-style-type: none"> 1. BRUVs. 2. BRUVs. 3. BRUVs. 4. BRUVs.
		References/Data:	
		<ol style="list-style-type: none"> 1. AIMS 2014. DATAHOLDER: AIMS/Woodside. 2. Fitzpatrick et al. 2012. DATAHOLDERS: WAMSI, AIMS. 3. DBCA unpublished data. DATAHOLDER: DBCA/AIMS. 4. CSIRO Data DATAHOLDER: CSIRO Data Centre (data-requestes-hf@csiro.au). 5. Stevens, J.D., P.R., White, W.T., McAuley, R.B., Meekan, M.G. 2009. 6. WAMSI unpublished data DATAHOLDER: AIMS 7. DATAHOLDER: WAMSI 8. CSIRO – Ningaloo Outlook 2020. 	<ol style="list-style-type: none"> 1. AIMS 2014a and Abdul Wahab et al., 2018. DATAHOLDER: AIMS. 2. AIMS 2014b. DATAHOLDER: AIMS. 3. Currey-Randall et. al., 2019. DATAHOLDER: AIMS 4. Currey-Randall et. al., 2019 and Jones et al. 2021. DATAHOLDER: AIMS

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Appendix I Cultural Heritage Search Results

List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

43 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - ACHIS search GDA94. Warning: Search area complex so results may be inaccurate. Contact DPLH for assistance.

Disclaimer

The *Aboriginal Cultural Heritage Act 2021 (Act)* recognises, protects, conserves, and preserves Aboriginal cultural heritage (ACH), and recognises the fundamental importance of ACH to Aboriginal people and its role in Aboriginal communities past, present and future. The Act recognises the value of ACH to Aboriginal people as well as to the wider Western Australian community.

Aboriginal cultural heritage in Western Australia is protected, whether or not the ACH has been reported to the ACH Council or exists on the Directory.

The information provided is made available in good faith and is predominately based on the information provided to the Department of Planning, Lands and Heritage by third parties. The information is provided solely on the basis that readers will be responsible for making their own assessment as to the accuracy of the information. If you find any errors or omissions in our records, including our maps, it would be appreciated if you email the details to the Department at AboriginalHeritage@dplh.wa.gov.au and we will make every effort to rectify it as soon as possible.

Copyright

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List of Aboriginal Cultural Heritage (ACH) Directory

Terminology

ID: Reported ACH is assigned a unique ID by the Department of Planning, Lands and Heritage using the format: ACH-00000001. For ACH places on the former Register the ID numbers remain unchanged and use the new format. For example the ACH ID of the place Swan River was previously '3536' and is now 'ACH-00003536'.

Access and Restrictions:

- **Boundary Reliable (Yes/No):** Indicates whether the location and extent of the ACH boundary is considered reliable.
- **Boundary Restricted = No:** ACH location is shown as accurately as the information submitted allows.
- **Boundary Restricted = Yes:** To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the ACH is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- **Culturally Sensitive = No:** Availability of information that the Department of Planning, Lands and Heritage holds in relation to the ACH is not restricted in any way.
- **Culturally Sensitive = Yes:** Some of the information that the Department of Planning, Lands and Heritage holds in relation to the ACH is restricted if it is considered culturally sensitive information. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the people who provided the information. To request access please contact AboriginalHeritage@dplh.wa.gov.au.
- **Culturally Sensitive Nature:**
 - **No Gender / Initiation Restrictions:** *Anyone* can view the information.
 - **Men only:** Only *males* can view restricted information.
 - **Women only:** Only *females* can view restricted information.

Status:

- **ACH Directory:** Aboriginal cultural heritage place or cultural landscape.
- **Pending:** Aboriginal cultural heritage place or cultural landscape with information in a verification stage.
- **Historic:** Aboriginal heritage places determined to not meet the criteria of Section 5 of the Aboriginal Heritage Act 1972. Includes places that no longer exist as a result of land use activities with existing approvals.

ACH Type:

- **Cultural Landscape:** a group of areas interconnected through the tangible elements of Aboriginal culture heritage present.
- **Place:** an area in which tangible elements of Aboriginal cultural heritage are present.

Place Type: The type of Aboriginal cultural heritage place. For example an artefact scatter place or engravings place.

Legacy Place Status: A status determined under the previous *Aboriginal Heritage Act 1972*:

- **Registered Site:** the place was assessed as meeting Section 5 of the *Aboriginal Heritage Act 1972*.
- **Lodged:** Information was received in relation to the place, but an assessment was not completed to determine if it met section 5 of the *Aboriginal Heritage Act 1972*.
- **Stored Data/Not a Site:** The place was assessed as not meeting Section 5 of the *Aboriginal Heritage Act 1972*.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place.

Coordinates

Map coordinates are based on the GDA 94 Datum.

Basemap Copyright

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Topographic basemap sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community.

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
628	CAMP THIRTEEN BURIAL	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	P07434
6754	OSPREY BAY 6	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06165
6755	OSPREY BAY INTERDUNAL 1	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06166
6756	OSPREY BAY INTERDUNAL 2	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06167
6757	BLOODWOOD CREEK MIDDEN 1	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06168
6758	BLOODWOOD CREEK MIDDEN 2	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06169
6759	BLOODWOOD CREEK MIDDEN 3	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06170
6760	BLOODWOOD CREEK SHORELINE	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06171
6761	LOW POINT MIDDEN	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06172
6762	MILYERING MIDDEN	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06173
6764	CAMP 17 SOUTH MIDDENS	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06175
6765	CAMP 17 NORTH MIDDENS	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06176

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
6782	28 MILE CREEK NORTH 1	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06140
6783	28 MILE CREEK NORTH 2	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Lodged	P06141
6784	MANDU MANDU CREEK SOUTH	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06142
6785	MANDU MANDU CREEK NORTH	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06143
6786	LAKESIDE COASTAL PLAIN	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Lodged	P06144
6787	MANDU MANDU ROCKSHELTERS.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter; Midden; Other; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Registered Site	P06145
6789	TURQUOISE BAY NORTH	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Lodged	P06147
6793	ROAD ALIGNMENT 1	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06151
6794	ROAD ALIGNMENT 2	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06152
6795	ROAD ALIGNMENT 3	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06153
6800	OYSTER STACKS MIDDEN	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06158
6801	NORTH T-BONE BAY	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06159

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
6802	OSPREY BAY 1	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06160
6803	OSPREY BAY 2	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06161
6804	OSPREY BAY 3	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06162
6805	OSPREY BAY 4	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06163
6806	OSPREY BAY 5	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06164
7126	MESA CAMP	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P05792
7206	WEALJUGOO MIDDEN.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Hunting Place; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P05710
7208	MILYERING ROCKS.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Hunting Place	*Registered Knowledge Holder names available from DPLH	Lodged	P05712
7254	SANDY BAY NORTH	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P05652
7265	LAKE SIDE VIEW	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P05664
7300	MANDU MANDU CK ROCKSHELTERS	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	P05646
7303	TULKI WELL MIDDEN	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P05649

Aboriginal Cultural Heritage Inquiry System

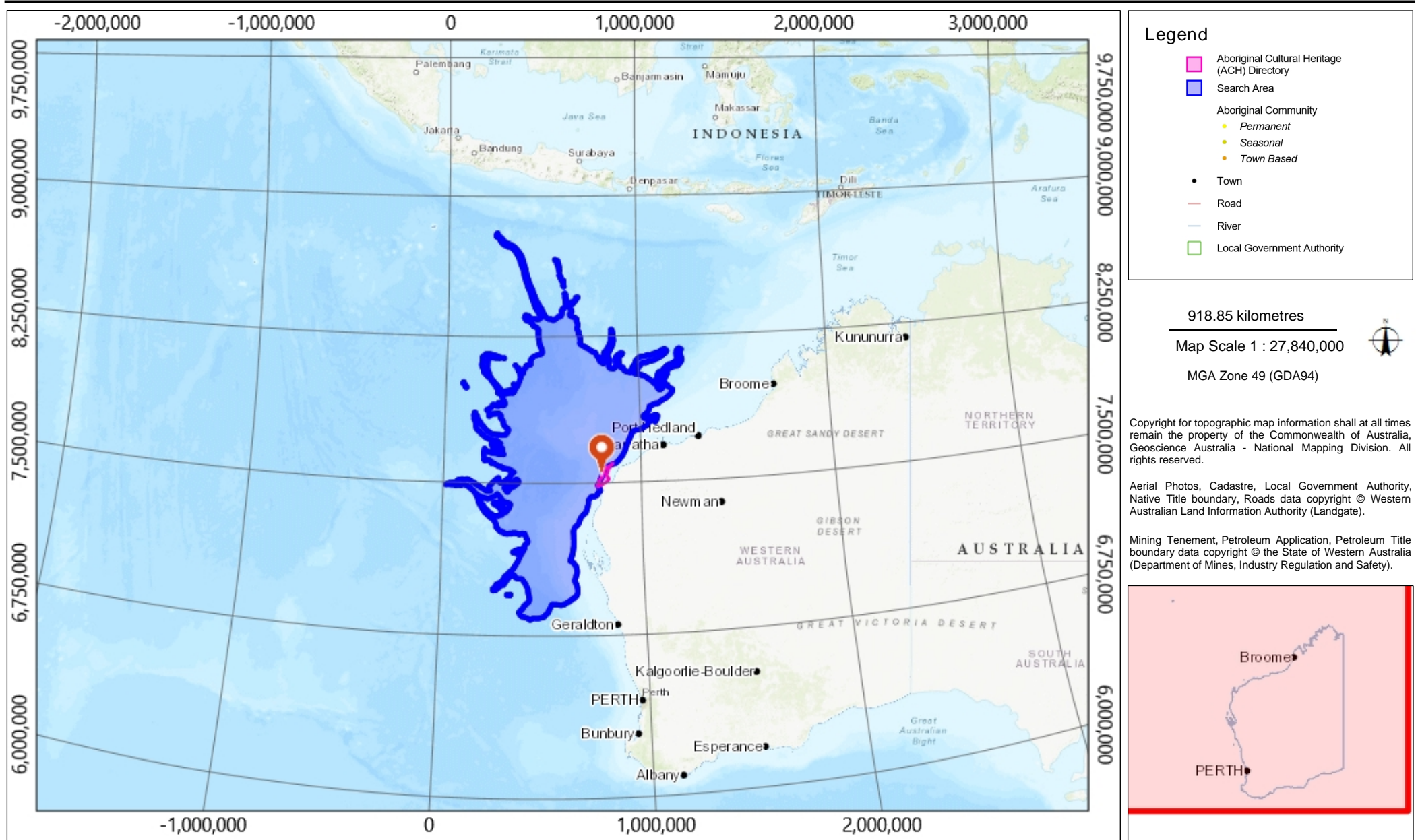
List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
7304	PILGRAMUNNA BAY MIDDEN	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P05650
7305	MANGROVE BAY.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial; Artefacts / Scatter; Hunting Place; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P05651
11458	NINGALOO (near)	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	P00701
17193	Ningaloo Station	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	
25076	Norwegian Bay Burial 01/2008	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Lodged	
39191	Warnangura (Cape Range) Cultural Precinct	No	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Ritual / Ceremonial; Creation / Dreaming Narrative; Engraving; Midden; Rock Shelter; Water Source	*Registered Knowledge Holder names available from DPLH	Lodged	
39730	Tantabiddi Midden 1	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place		*Registered Knowledge Holder names available from DPLH	Lodged	

Aboriginal Cultural Heritage Inquiry System

For further important information on using this information please see the Department of Planning, Lands and Heritage's Disclaimer statement at <https://www.wa.gov.au/disclaimer>

Map of Aboriginal Cultural Heritage (ACH) Directory



Appendix J 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 put in place to avoid impacts to cultural values, or where avoidance is not possible, to minimise and mitigate the impacts to an acceptable level.

Where cultural values are identified post activity completion, any controls relevant to value management will be implemented during the next relevant activity.

2. Support for the identification and recording of cultural features

Woodside will support Traditional Custodians to record and articulate their Sea Country values and will invest in cultural assessments codesigned with Traditional Custodians, where required, to inform potential risks to cultural values from our petroleum activities.

This may include supporting cultural mapping by Traditional Custodians to identify and map significant cultural features including archaeological sites and other cultural values. The scoping of the mapping process will be codesigned with Traditional Custodians.

Woodside understands that cultural knowledge remains the intellectual property of Traditional Custodians and will agree with Traditional Custodians at the outset how that information from surveys will be used to feedback into and inform the environment plan's design and implementation.

In addition, Woodside applies the Cultural Heritage Management Procedure 2019, updated in 2023, to the Program which:

- provides a process for the identification, protection, and management of Cultural Heritage taking into account relevant standards, in particular, the United Nations Declaration on the Rights of Indigenous Peoples, the Charter for the Protection and Management of the Archaeological Heritage, the Convention for the Safeguarding of the Intangible Cultural Heritage, and the Convention on the Protection of the Underwater Cultural Heritage;
- applies to underwater cultural heritage and, consistent with current practice, provides for the commissioning of (where appropriate) both archaeological and ethnographic assessments of cultural values over the submerged landscape; and
- the process includes the following:
 - early engagement with relevant Traditional Custodians
 - identification of potential heritage, this could include desktop and field surveys undertaken with the Traditional Custodians.
- the development of cultural management strategies; and, where it is determined cultural heritage may be impacted, the development of Cultural Heritage Management Plans codesigned with Traditional Custodians and implemented by Woodside's First Nations team which:
 - focus on avoidance or minimisation of impacts; and
 - provide regular reviews and for inclusion of new information and further development of the Cultural Heritage Management Plan.

Woodside is committed to continue to receive feedback on cultural values for the life of an environment plan, the inclusion of new information and the development of avoidance or mitigation strategies in collaboration with Traditional Custodians. This information will be recorded via the Woodside Management of Knowledge Process and any potential impacts to the accepted Environment Plan evaluated via the Woodside Management of Change Process.

3. Building capacity for the ongoing protection of country

Woodside will support measures to increase the capability and capacity of the Traditional Custodian groups. This is guided by Woodside's Indigenous Affairs Strategy 2019 ("Strategy"), which is designed to enable the building and maintaining of relationships with Traditional Custodians to leave a lasting legacy, including strengthening of Traditional Custodians' capacity to care for and manage Country, including Sea Country. The Strategy was developed with inputs from Traditional Custodians and contains four pillars that direct Woodside's social investment, policies relating to economic development, procurement and employment, and Woodside's agreement making and implementation of agreements. The pillars are:

1. Culture and Heritage Management: support social outcomes through protection, recognition and respect for culture and heritage;
2. Economic Participation: provide training, jobs, and business opportunities;

3. Capability and capacity: ensure strong corporate governance, leadership development and education initiatives to support self-determination; and
4. Safer and Healthier Communities: partner with Aboriginal people and service providers to maximise safer and healthier community outcomes.

Woodside is committed to an ongoing relationship between Woodside and the Traditional Custodian groups. Through consultation with Traditional Custodians Woodside will continue to:

- establish support for Indigenous ranger programs via social investment;
- establish support for Indigenous oil spill response capability via investigating training models;
- establish support for identification and recording of cultural values and the management of that information by Traditional Custodians;
- establish support for programs identified by the Traditional Custodians as important to them and as agreed by Woodside.

4. Support for capacity and capability in relation to governance

Pillar 3 of the Indigenous Affairs Strategy 2019 focuses on ensuring strong corporate governance, leadership development and education initiatives to support self-determination. To enable this, Woodside will support measures to increase the capability and capacity of the Traditional Custodian groups, including in relation to governance and management systems.

The nature of this support will be informed by the individual needs of Traditional Custodian groups, but may include:

- funding or other support for community meetings, particularly where consultation with representative bodies lies outside of that body's core business and cultural authority or mandate needs to be secured,
- resourcing internal expertise so that information is managed consistently and internally, including ensuring appropriate record keeping of consultation to provide stakeholders with a lasting record of discussions, and
- development or upgrade of IT systems to manage information.

5. Program Reporting and Review of Effectiveness

Woodside will undertake an annual review of the Program to assess its effectiveness and adapt the Program accordingly. The annual review will also include an assessment of appropriateness of the methods used to undertake ongoing consultation with Traditional Custodians.

Progress of the Program will be reported annually in line with annual sustainability reporting via the Woodside website.

6. Current Status

Following distribution of this proposed Program, Woodside is now participating in a number of specific ongoing consultation activities with Traditional Custodian Relevant Persons. Specific ongoing activities are tabulated below:

Traditional Custodian Relevant Person	Ongoing Consultation Description	Forward Plan	Estimated Timeframes
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	BTAC proposed a Collaboration Agreement in May 2023, Woodside agreed in principle, and exchanged correspondence to understand details of the proposal. The Collaboration Agreement would enable support for BTAC to undertake an ethnographic assessment to articulate values, and ensure appropriate cost recovery.	Woodside and BTAC have executed a Costs Acceptance Letter. Woodside has developed a Collaboration Agreement which is currently under internal Woodside review. Once settled internally it will be put to BTAC for their consideration.	The draft Collaboration Agreement will be provided to BTAC for consideration in December 2023. Woodside will follow up on a monthly basis for at least six months with BTAC once they are in receipt of the draft proposed Collaboration Agreement from Woodside, or until the Agreement is in place.
Yamatji Marlpa Aboriginal Corporation (YMAC)	In June 2023, YMAC provided Woodside a proposed draft Framework Agreement, and a proposal to fund in-house expertise to support consultation and implement the Collaboration Framework. In July 2023, Woodside agreed in principle to the proposed 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.	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.	Woodside will follow up with YMAC on a monthly basis for at least six months, seeking to progress the Consultation Framework and funding agreement.
Wirrawandi Aboriginal Corporation (WAC)	In August 2023, WAC proposed a Framework Agreement with Woodside to provide a streamlined, formalised approach to consultation between WAC and Woodside. Woodside has confirmed receipt of the proposed framework from WAC.	Woodside is in contact with the WAC CEO and is currently developing a response to the proposed Framework Agreement put forward by WAC. WAC do not object to Woodside progressing environmental plans on the proviso that both parties enter into an Agreement suitable to each party. WAC have suggested a timeframe to settle the Agreement over the next 2-3 months. Woodside will be aiming to reach agreement within a shorter timeframe.	Ongoing Framework Agreement settled in 2023.
Ngarluma Aboriginal Corporation (NAC)	In September 2023, NAC proposed a Joint Working Group to practically manage consultation processes. It was proposed that the group would meet monthly for 2023 and quarterly thereafter, meetings would include NAC CEO and NAC Directors and potentially independent SME/s, the proposal was that Woodside draft a Framework Agreement, and included a request for funding for this approach. Woodside provided in-principle support for the proposal.	Woodside has provided in-principle support for NAC's proposal and is currently developing a draft Framework Agreement which once settled internally will be sent to NAC for their response.	In accordance with NAC's proposed timeframe, Woodside aims to prepare a draft Framework Agreement, settle internally and then meet to discuss in 2023.
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	In a meeting during August 2023, NTGAC proposed a Framework Agreement. This included terms for ongoing	Woodside and NTGAC/YMAC have agreed in writing to develop a Framework Agreement. Woodside have been responding to queries from NTGAC who have passed	Woodside will follow up with NTGAC on a monthly basis for at least six months, seeking to

	engagement such as frequency of consultation, participation, and content. 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.	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.	progress the Framework Agreement and general report.
Yinggarda Aboriginal Corporation (YAC)	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.	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.	Woodside will continue following up with YAC on a monthly basis for at least six months, seeking to progress the Framework Agreement.
Robe River Kuruma Aboriginal Corporation (RRKAC)	RRKAC have noted that they are insufficiently resourced to engage further and respond to Woodside regarding EPs. Woodside assesses that a Framework Agreement could address this.	Woodside has on several occasions written to RRKAC offering to fund consultation meetings. Woodside will offer RRKAC a Framework Agreement which will propose funding, scope of work and timeframes to assist with consultation and ongoing consultation. If RRKAC are open to the proposal, it is intended to put forward a draft Framework Agreement to RRKAC within the next 2 months.	Woodside will follow up with RRKAC monthly for at least six months, seeking to progress a Framework Agreement.
Ngarluma Yindjibarndi Foundation Limited (NYFL)	NYFL and Woodside have an existing Agreement in place which enables quarterly communication about Woodside activities. NYFL has said they are working with other First Nations organisation and representative Bodies developing a Framework Agreement.	Woodside has not yet seen a draft of the Framework Agreement. Woodside's expectation is that it will outline principles of engagement, details of resourcing, timeframes to meet agreed outcomes etc. Woodside look forward to receiving a draft Agreement and will engage with NYFL to settle on the details of any proposal.	Woodside will continue to follow up monthly with NYFL for at least six months, seeking to progress a Framework Agreement.
Yindjibarndi Aboriginal Corporation	Yindjibarndi have advised that they are represented by NYFL for consultation on oil and gas matters. NYFL and Woodside have met to discuss the consultation framework to be used by NYFL as representatives of Yindjibarndi. Woodside will seek to use the Framework Agreement proposed by NYFL (above) for ongoing consultation with Yindjibarndi.	Per NYFL above.	Per NYFL above.
Kariyarra Aboriginal Corporation (KAC)	In September 2023 KAC proposed an agreement which would include meeting arrangements, ongoing consultations, specialist advice and contact protocols.	Woodside support funding request that are reasonable and will seek to reach agreement on a funding proposal put forward by KAC. Woodside agrees that a Engagement Protocol is a sound tool to set out ongoing consultation with KAC, funding arrangements and social investment opportunities that KAC would want explored. Woodside will propose a first draft of a protocol and put to KAC in the first	Woodside will continue to follow up monthly with KAC for at least six months, seeking to progress and Engagement Protocol.

		instance. Woodside will prepare a draft protocol within the next two months to for KAC's consideration.	
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