Chevron

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wheatstone project start-up and operations environment plan

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1 environment plan summary

In accordance with regulations 28 and 35 of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 Commonwealth (Cth) (OPGGS(E)R), all Environment Plans (EPs) are published (with the sensitive information part removed) on the National Offshore Petroleum Safety and Environment Management Authority (NOPSEMA) website.

To fulfil the requirements of an Environment Plan (EP) summary for public disclosure, as required by regulations 35(6) and 35(7), the Wheatstone Project Start-up and Operations Environment Plan Summary (Table 1-1) has been prepared from material provided in this Environment Plan (EP), and in the EP summary statement format preferred by NOPSEMA.

An EP Summary as required by Regulation 11(7) of the Western Australian Petroleum Pipelines (Environment) Regulations 2012 and the Petroleum (Submerged Lands) (Environment) Regulations 2012 has been prepared as a separate document and submitted to the WA Department of Mines, Petroleum and Exploration (DMPE).

Table 1-1: Environment Plan summary

Regulation	EP summary material requirement	Relevant section of the EP
35(7)(a)(i)	the location of the activity	Section 2.2 Section 3.1.1
35(7)(a)(ii)	a description of the receiving environment	Section 4 Appendix D of the OSMP (Ref. 101)
35(7)(a)(iii)	a description of the activity	Section 3
35(7)(a)(iv)	details of environmental impacts and risks	Section 8
35(7)(a)(v)	a summary of control measures for the activity	Section 8
35(7)(a)(vi)	a summary of the arrangements for ongoing monitoring of the titleholder's environmental performance	Section 9
35(7)(a)(vii)	a summary of the response arrangements in the oil pollution emergency plan	Section 8.3; Ref. 102*
35(7)(a)(viii)	details of consultation already undertaken, and plans for ongoing consultation	Section 6
35(7)(a)(ix)	details of the titleholder's nominated liaison person for the activity	Section 2.4

** Available publicly at: https://docs.nopsema.gov.au/A748691*

2 introduction

2.1 Overview

Chevron Australia Pty Ltd (CAPL) has prepared this EP to document the assessment and management of potential environmental impacts and risks associated with start-up and operations activities of the Wheatstone Liquefied Natural Gas (LNG) Project (the Project).

The Project produces hydrocarbon fluids from offshore fields, transports these fluids through flowlines to the Wheatstone platform (the platform) for initial processing, and then transports gas and condensate through the trunkline to the onshore gas plant for further processing. Resultant LNG and condensate are exported by vessels to the international market, and gas is available to the domestic market via a tie-in with the existing Dampier to Bunbury Natural Gas Pipeline.

The start-up and operations activities detailed in this EP will be conducted in Commonwealth waters, WA State waters, and on the WA mainland, thus spanning more than one regulatory jurisdiction. This EP has been developed and submitted to the following regulators for assessment under their relevant jurisdictions:

- the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (OPGGS(E)R)
- the WA Department of Mines, Petroleum and Exploration (DMPE) for approval under the WA Petroleum (Submerged Lands) (Environment) Regulations 2012 (PSLER), and the WA Petroleum Pipelines (Environment) Regulations 2012 (PPER).

2.2 Location

The Wheatstone platform will receive fluids for processing and subsequent transportation to the WA mainland via the trunkline. Fluid production will be from wells located at the following fields located off the Pilbara coast of WA:

- Wheatstone (WA-46-L, WA-47-L and WA-48-L)
- Iago (WA-46-L and WA-48-L)
- Julimar-Brunello (Production Licence WA-49-L with associated petroleum pipeline and flowlines authorised by WA-26-PL, WA-29-PL, WA-34-PL, WA-36-PL JDP3-JUA1E and WA-34-PL JDP3-JULB)

Approximate water depths in the offshore licence areas within the scope of this EP are ~150–280 m for the Wheatstone field, ~70–120 m for the Iago field and 71-244m for the Julimar-Brunello fields. The platform is in water ~71 m deep.

The trunkline spans both Commonwealth waters (WA-25-PL) and State waters (TPL/25): the section from the platform to the State waters boundary, and then from the State waters boundary to the shore crossing through a microtunnel, respectively. The trunkline exits the microtunnel and remains buried onshore for ~1 km before emerging above ground just before (~15 m) the onshore endpoint (defined in Section 2.3) located upstream of the gas plant. Figure 2-2 shows the onshore trunkline section and the surrounding licence area PL 99, which is included in the scope of this EP. The trunkline crosses the shore at Ashburton North, which is ~12 km southwest of Onslow, within the Shire of Ashburton, WA.

The trunkline generally extends along the outer continental shelf at ~110 m isobath, and crosses the shore through a microtunnel at Ashburton North, ~12 km south-west of Onslow on the Pilbara coast. The platform is ~50 km north of the Montebello Islands, while the trunkline is ~46 km west of Barrow Island and the Montebello Islands.

Detailed information regarding the location and layout of infrastructure is included in Section 3.1.

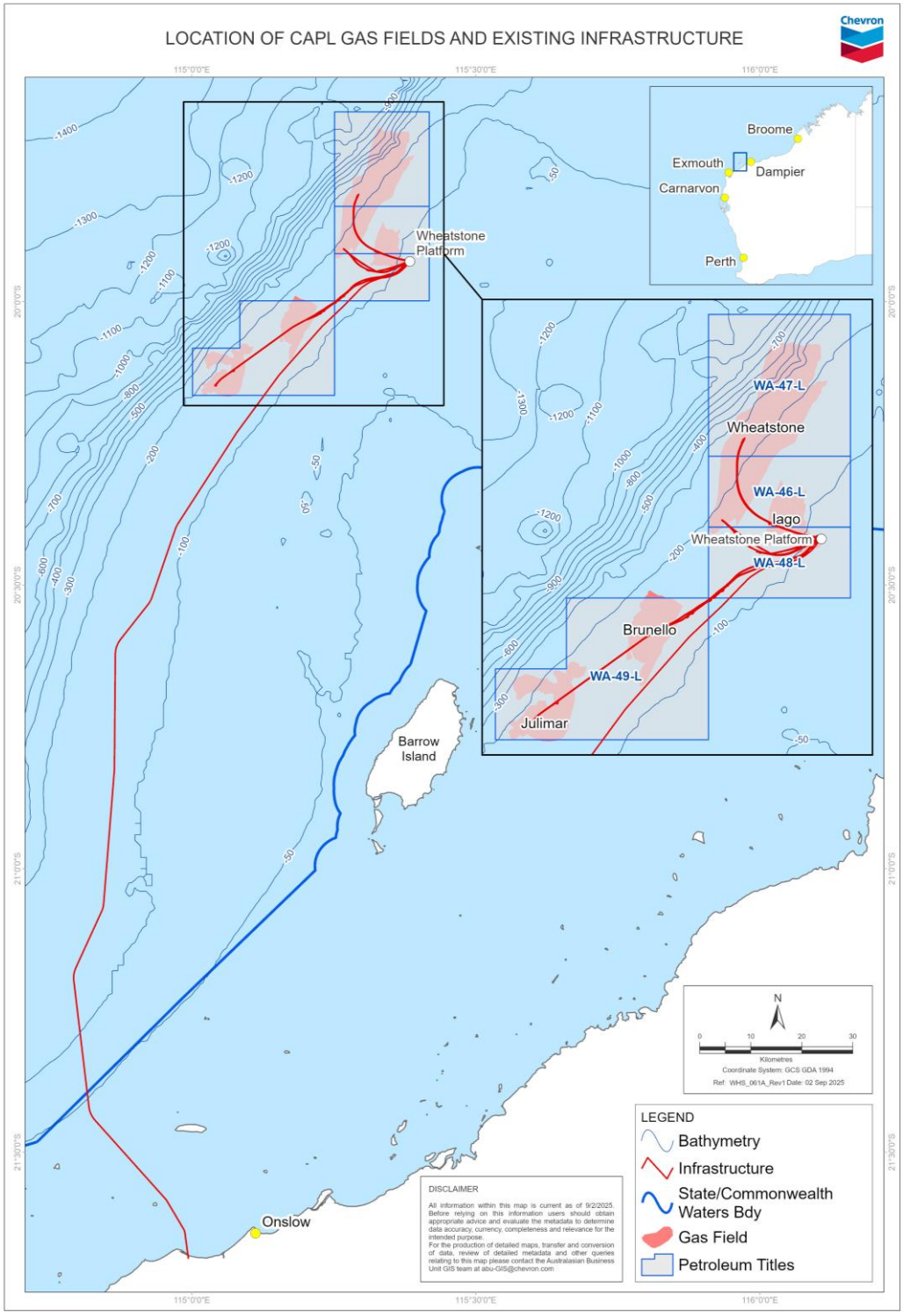


Figure 2-1: Activity location



Figure 2-2: Onshore trunkline and licence area

2.3 Scope

2.3.1 In scope

This EP addresses start-up and operations activities associated with the Wheatstone, Iago and Julimar-Brunello hydrocarbon system and platform, which comprises:

- the Wheatstone and Iago field wells, trees, manifolds, flowlines, and umbilicals in WA-46-L, WA-47-L and WA-48-L, and all field subsea isolation valves (SSIVs) and flowline/umbilical risers at the platform
- the Julimar-Brunello field wells, trees, manifolds, flowlines, and umbilicals within Production Licence WA-49-L and associated petroleum pipeline and flowlines authorised by WA26-PL, WA-29-PL, WA-34-PL JDP3-JULB and WA-36-PL JDP3-JUA1E, and all field subsea isolation valves (SSIVs) and flowline/umbilical risers at the platform
- the trunkline, from the platform to the onshore endpoint (WA-25-PL, TPL/25, PL 99)
  - the onshore endpoint is the south-eastern terminus of the petroleum pipeline licence PL 99 shown in Figure 2-2, which includes the trunkline and associated infrastructure such as the pig receiver station, flanges, and valves, which are upstream of the gas plant area (as outlined in the licence PL 99)

The Wheatstone, Iago and Julimar-Brunello hydrocarbon system and platform are further described in Sections 3.2 and 3.3 respectively.

Specifically, this EP addresses the following activities associated with the Wheatstone, Iago and Julimar-Brunello hydrocarbon system and platform:

- start-up and operation of the Wheatstone, Iago and Julimar-Brunello hydrocarbon system (Section 3.2)
- start-up and operation of the platform infrastructure and facilities, including remote monitoring and operating from the central control room (CCR), processing of all production fluids, platform maintenance, and well clean-ups to the platform (Section 3.3)
- inspection, maintenance, and repairs (IMR) of the Wheatstone, Iago and Julimar-Brunello hydrocarbon system (Section 3.4)
- long-term planning for decommissioning (Section 3.5)
- field support (Section 3.6)
  - this EP applies to vessels and vehicles directly involved in the petroleum activity once they enter the operational area (OA) until they exit from the OA
  - this EP also applies to helicopters performing petroleum activities at the platform, typically within 500 m.

2.3.2 Out of scope

The following summarises the facilities and activities that are not covered in the scope of this EP:

- activities associated with drilling, well completion, well intervention, and plug and abandonment activities for the Wheatstone and Iago wells which are

covered under the NOPSEMA-accepted *Wheatstone Project: Wheatstone Well Intervention and Infill Drilling Environment Plan* (Ref. 107)

- activities associated with drilling, well completion, well intervention, and plug and abandonment activities for the Julimar Development Phase 3 wells which are covered under the NOPSEMA-accepted *Julimar Development Phase 3 Drilling and Subsea Installation EP* (Ref. 486)
- vessels (including emergency response vessels) transiting to or from the OA; these vessels are deemed to be operating under the Commonwealth *Navigation Act 2012* (Cth) and not performing a petroleum activity
- end of facility life (EOFL) decommissioning and removal of infrastructure; these activities are not scheduled to occur within the 5-year in-force period of this EP (refer to Section 3.6).

2.4 Titleholder details

The titleholder details and nominated liaison person for this EP are listed in Table 2-1 and Table 2-2, respectively.

Section 286A of the OPGGS Act requires notification is provided to NOPSEMA and the National Offshore Petroleum Titles Administrator (NOPTA) if there is a change to a registered titleholder or contact details for the registered titleholder; this notification is to occur within 30 days of such a change.

The contact details for the nominated liaison person for this EP are listed in Table 2-2. Regulation 23(3) of the OPGGS(E)R requires that CAPL notifies NOPSEMA if the titleholder's nominated liaison person or contact details for the nominated liaison person changes.

Notification of change in details of a titleholder, liaison person, or contact information will be submitted to the relevant regulator via the appropriate means and timeframes in accordance with Section 9.3.2.2.

Table 2-1: Titleholder details

Titles	Details	Titleholders[2]	Nominated Titleholder	Address
Commonwealth – Wheatstone & Iago				
WA-3-IL	Infrastructure Licence (Platform)	Chevron Australia Pty Ltd Woodside Energy Julimar Pty Ltd PE Wheatstone Pty Ltd Kufpec Australia (Julimar) Pty Ltd Kufpec Australia (Wheatstone Iago) Pty Ltd Kyushu Electric Wheatstone Pty Ltd	Chevron Australia Pty Ltd (ACN: 086 197 757)	1 The Esplanade Perth WA, 6000
WA-25-PL	Pipeline Licence (Trunkline–Commonwealth waters)			

[2] *At the completion of an asset swap between Chevron Australia and Woodside, Woodside will transfer all of its interest in both the Wheatstone (13%) and Julimar-Brunello projects (65%) to Chevron Australia. Following the asset swap, Chevron will notify NOPSEMA and NOPTA of the change to the registered titleholder in accordance with Section 286A of the OPGGS Act.*

Titles	Details	Titleholders[2]	Nominated Titleholder	Address
WA-46-L	Production Licence	Chevron Australia Pty Ltd PE Wheatstone Pty Ltd Kyushu Electric Wheatstone Pty Ltd		
WA-47-L	Production Licence			
WA-48-L	Production Licence	Chevron Australia Pty Ltd Kufpec Australia (Wheatstone Iago) Pty Ltd PE Wheatstone Pty Ltd Kyushu Electric Wheatstone Pty Ltd		
Commonwealth – Julimar & Brunello[1]				
WA-49-L	Production Licence	Woodside Energy Julimar Pty Ltd KUFPEC Australia (Julimar) Pty Ltd	Woodside Energy Julimar Pty Ltd (ACN: 130 391 36)	11 Mount Street, Perth, WA, 6000
WA-26-PL,	Pipeline Licences			
WA-29-PL	Pipeline Licences			
WA-34-PL JDP3-JULB	Pipeline Licences			
WA-36-PL JDP3-JUA1E	Pipeline Licences			
State – Wheatstone				
TPL/25	Pipeline Licence (Trunkline–State waters)	Chevron Australia Pty Ltd Kufpec Australia (Julimar) Pty Ltd Kyushu Electric Wheatstone Pty Ltd PE Wheatstone Pty Ltd Kufpec Australia (Wheatstone Iago) Pty Ltd Woodside Energy Julimar Pty Ltd	Chevron Australia Pty Ltd (ACN: 086 197 757)	1 The Esplanade Perth WA, 6000
PL 99	Pipeline Licence (Trunkline–State onshore)			

Table 2-2: Nominated liaison person

Position	General Manager Wheatstone Operations
Company	Chevron Australia Pty Ltd
ACN	086 197 757
Business address	1 The Esplanade, Perth WA, 6000
Telephone number	+61 8 9216 4000
Email	feedback@chevron.com

2.5 Environmental management framework

CAPL's operations are managed in accordance with Chevron Corporation's Operational Excellence Management System (OEMS), which is described in Section 9.

2.5.1 Environmental policy

CAPL's commitment to environmental management in all aspects of operations is documented in Chevron Corporation's Operational Excellence (OE) Policy 530 (appendix a).

2.5.2 Relevant requirements

In accordance with regulation 21(4) of the OPGGS(E)R, the legislative and other requirements that apply to the petroleum activity and that are relevant to the environmental management of the activity are listed in Table 2-3 to Table 2-5 respectively. Standards, guidelines, international conventions, and agreements relevant to the petroleum activities are described in Table 2-6 and Table 2-7.

Table 2-3: Commonwealth legislative requirements

Legislation	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
Australian Maritime Safety Authority Act 1990	Aims to promote maritime safety, protect the marine environment from pollution from ships or other environmental damage caused by shipping, and provide for a national search and rescue service	Requirements include the involvement of the Australian Maritime Safety Authority (AMSA) in response to relevant spill events	Roles and responsibilities are described in the Oil Pollution Emergency Plan (OPEP) (Ref. 102).
Biosecurity Act 2015 Biosecurity Regulations 2016	Provides biosecurity protection in Australian waters beyond territorial limits	Pre-arrival information must be reported through the Maritime Arrivals Reporting System (MARS) before arrival in Australian waters	Section 7.4.8
		Australian Ballast Water Management Requirements (Ref. 138)	
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) EPBC Regulations 2000	Provides for the protection and management of nationally and internationally important flora, fauna, ecological communities, and heritage places	The EP must describe matters protected under Part 3 of the EPBC Act and assess any impacts and risks to these protected matters	Section 4, Section 7, and Section 8
		EPBC Regulations 2000 – Part 8 Division 8.1	Section 7.4.2 and Section 7.4.7

Legislation	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
		Interacting with cetaceans	
		Injury or fatality caused to EPBC-listed fauna shall be reported	Section 9.4.2
		The Wheatstone Project was approved under EPBC Act and is subject to approval conditions. The conditions are intended for the management of the Wheatstone Project as a whole, including activities which are beyond the scope of this EP.	Where relevant, control measures and reporting requirements are consistent with requirements of EPBC 2008/4469 Section 7 and Section 8 No decommissioning is scheduled to occur during the in-force period of this EP. However, the approach to decommissioning assets is described in Section 3.6.
		The Julimar Brunello Gas Development Project was referred for assessment under the EPBC Act (2011/5936). A decision by the Environment Minister determined that the action is not a controlled action, provided it is undertaken in a particular manner	Table 2-4.
Navigation Act 2012 Various marine orders	Provides standards regarding collision prevention for vessels. This Act provides the legislative power for Australia to implement several international conventions, including the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS) and the International Convention for the Safety of Life at Sea.	Notice to Mariners	Section 7.4.1 and Section 8.2
		Marine order 28—Operations and standards	Section 7.1.1
		Marine order 30—Prevention of collisions	Section 8.2

Legislation	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
Navigation Act 2012 *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* *Protection of the Sea (Harmful Anti-fouling Systems) Act 2006* Various marine orders	Gives effect to the requirements under the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) in Australia	Marine order 91—Marine pollution prevention—oil	Section 7.4.9, Section 7.4.11, and Section 8.2
		Marine order 95—Marine pollution prevention—garbage	Section 7.4.9, Section 7.4.10
		Marine order 96—Marine pollution prevention—sewage	Section 7.4.9
		Marine order 97—Marine pollution prevention—air pollution	Section 7.4.4
		Marine order 98—Marine pollution prevention—anti-fouling systems	Section 7.4.8
National Greenhouse and Energy Reporting Act 2007 (Cth) (NGER Act)	The NGER Act establishes the national scheme for the reporting of greenhouse gas emissions, energy production and energy consumption.	Greenhouse gas emissions, energy consumption and energy production from the platform will be reported under the NGER Act.	Section 7.2.3, and Section 7.4.5
Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act) OPGGS Environment Regulations 2009 (OPGGS(E)R)	The OPGGS(E)R under the OPGGS Act requires a titleholder to have an accepted EP in place prior to commencement of a petroleum activity The regulations ensure petroleum activities are undertaken in an ecologically sustainable manner in accordance with an EP	An EP for a petroleum activity must be accepted by NOPSEMA before activities commence	This EP, including the OPEP (Ref. 102) and Operational and Scientific Monitoring Plan (OSMP) (Ref. 101)
OPGGS (Resource Management and Administration) Regulations 2011	These regulations require a titleholder to have an accepted Well Operations Management Plan (WOMP) in place The purpose of a WOMP is to ensure systems are in place to manage well	A WOMP for a petroleum well activity must be accepted by NOPSEMA before activities commence	*Wheatstone Project: Producing Phase Well Operations Management Plan* (Ref. 92)

Legislation	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
	integrity and well activities.		
Underwater Cultural Heritage Act 2018 (UCH Act)	Provides protection for shipwrecks, sunken aircraft and other cultural heritage sites in Australian waters	Identification of the presence of protected cultural heritage sites and assessment of any impacts and risks to these sites	Section 4, Section 7 and Section 8

Table 2-4: EPBC 2011/5936 Particular Manner Conditions

Condition	Requirement	Demonstration of how requirements are met
1	An Oil Spill Contingency Plan and an Environment Plan as described in the referral and additional information must be approved by the relevant authority and in place prior to the proposed action commencing.	This EP, including the OPEP (Ref. 102)
2	Procedures and equipment systems for ensuring well control must meet best practice industry standards and must be implemented prior to the proposed action commencing. This includes the installation of a minimum of two well barriers as specified in the referral and additional information.	Wheatstone Project: Producing Phase Well Operations Management Plan (Ref. 92)
3	The oil spill preparedness and response measures and equipment described in the referral and additional information must be in place prior to the proposed action commencing.	OPEP (Ref. 102)
4	To minimise risks of a hydrocarbon release during decommissioning, decommissioning activities must be taken into account in the Environment Plan, as specified in the referral.	No decommissioning is scheduled to occur during the in-force period of this EP. However, the approach to decommissioning assets is described in Section 3.6.

Table 2-5: Summary of applicable State legislation

Legislation	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
Biodiversity Conservation Act 2016 Biodiversity Conservation Regulations 2018	Provides for the conservation and protection of biodiversity and biodiversity components in Western Australia	The EP must describe matters protected under the BC Act and assess any impacts and risks to these protected matters	Section 4, Section 7 and Section 8
Environmental Protection Act 1986 (EP Act)	Provides for the prevention, control, and abatement of pollution and environmental harm, for the conservation,	The Project was assessed through the EIS/ERMP assessment process under the EP Act and was approved by the	Where relevant, control measures and reporting requirements are consistent with

Legislation	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
	preservation, protection, enhancement, and management of the environment	WA Minister for Environment on 30 August 2011 by way of Ministerial Statement 873 (MS 873) The conditions are intended for the management of the Wheatstone Project as a whole, including activities which are beyond the scope of this EP.	requirements of MS 873 Section 7 and Section 8
Petroleum Pipelines Act 1969 PPER 2012	The PPER under this Act require an operator to have an accepted EP in place for any petroleum pipeline activity on State land	An EP for a petroleum activity must be accepted by DMPE before activities commence	This EP, including the OPEP (Ref. 102), and OSMP (Ref. 101)
Petroleum (Submerged Lands) Act 1982 PSLER 2012	The PSLER under this Act require an operator to have an accepted EP in place for any petroleum activity in State waters The regulations ensure petroleum activities are undertaken in an ecologically sustainable manner in accordance with an EP	An EP for a petroleum activity must be accepted by DMPE before activities commence	This EP, including the OPEP (Ref. 102), and OSMP (Ref. 101)
Pollution of Waters by Noxious Substances Act 1987	Protects State waters and other waters under WA jurisdiction from pollution by oil and noxious substances	This Act gives effect to MARPOL 73/78 Annex I and II and sets measures to respond to spills	Section 7.4.9, Section 8.2, and OPEP (Ref. 102)

Table 2-6: Standards and guidelines

Standard / guideline	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
Australian Ballast Water Management Requirements (Ref. 138)	Provides guidance on how vessel operators should manage ballast water when operating within Australian seas in order to comply with the *Biosecurity Act 2015* (Cth). They also	Ballast water management requirements for vessels, including having a ballast water management plan and certificate	Section 7.4.8

Standard / guideline	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
	align to the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004 (the Ballast Water Management Convention).	(unless an exemption applies).	
Australian Biofouling Management Requirements (Ref. 132).	Sets out vessel operator obligations for the management of biofouling when operating vessels under biosecurity control within Australian territorial seas.	Biofouling management for vessels, including pre-arrival report (PAR), and having biofouling management plans.	Section 7.4.8
Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Ref. 278)	International Maritime Organization (IMO) guidelines for global management of biofouling.	Requires a biofouling management plan and record book to be available and maintained.	Section 7.4.8
National Light Pollution Guidelines for Wildlife (Ref. 169)	Outlines the process to be followed where there is the potential for artificial lighting to affect wildlife; applies to new projects, lighting upgrades and where there is evidence of wildlife being affected by existing artificial light.	The EP must assess if artificial lighting is likely to affect wildlife and identify the management tools to minimise and mitigate impacts and risks	Section 7.4.6
OGCI *Aiming for Zero Methane Emissions Initiative* (Ref. 380)	The approach of the Aiming for Zero Methane Emissions Initiative includes to "strive to reach near zero methane emissions from our operated oil and gas assets by 2030", and to "put in place all reasonable means to avoid methane venting and flaring, and to repair detected leaks, while preserving the safety of people and the integrity of operations" (Ref. 380). This initiative is meant as a supplement to the multi-stakeholder initiatives such as the	Chevron publicly reports the activity's methane emissions annually, in line with the Aiming for Zero Methane Emissions Initiative. Management strategies, projects, or improvements, including those related to initiatives or commitments made by Chevron Corporation, may be identified and implemented via the 'emissions reduction review' process or adaptive management	Section 7.2.3

Standard / guideline	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
	Methane Guiding Principles. Chevron Corporation is a signatory to the Aiming for Zero Methane Emissions Initiative.	processes ('address uncertainty' and 'methane management) control measures.	
Accelerating action: an SDG Roadmap for the oil and gas sector (Ref. 288)	Chevron Corporation is a corporate member of IPIECA. Through membership in IPIECA, Chevron Corporation worked with the World Business Council for Sustainable Development on the creation of a Sustainable Development Goal (SDG) Roadmap for the oil and gas sector ("Roadmap"). The Roadmap identifies how IPIECA, as an industry association, and individual oil and gas companies working within the sector, can work toward a lower-emissions future while contributing to a healthier and more prosperous world aligned with the 2030 Agenda for Sustainable Development. The Roadmap identifies 10 SDGs as priority areas where the sector has the most influence or ability to respond to societal needs.	Chevron publishes an annual Corporate Sustainability Report, aligned with the Roadmap priority areas, disclosing progress against relevant SDGs.	Section 7.2.3 and Section 7.4.5

Table 2-7: International agreements and conventions

Convention / agreement / code of practice	Applicability to the petroleum activity
Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Ref. 20)	Provides a framework for water resource management, and states specific water quality guidelines for environmental values and the context within which they should be applied.
International Convention for the Prevention of Pollution from Ships (MARPOL)	Designed to reduce pollution of the marine environment from ships, including operational discharges (e.g. sewage, oil, garbage, air emissions) and accidental causes. MARPOL currently includes six technical Annexes.

Convention / agreement / code of practice	Applicability to the petroleum activity
	MARPOL is enacted in Australia through the Commonwealth *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* (Cth) and the *Navigation Act 2012* (Cth).
International Convention for the Control and Management of Ships' Ballast Water and Sediments	Aims to prevent the introduction of marine organisms to new regions and environments. Australia is party to the convention and has developed the *Australian Ballast Water Management Requirements* (Ref. 138) consistent with the requirements of the Convention. The Australian Ballast Water Management Requirements are enforceable under the Commonwealth *Biosecurity Act 2015*.
Convention of the Conservation of Migratory Species of Wild Animals 1979 (Bonn Convention)	This convention aims to improve the status of all threatened migratory species by national action and international agreements between range states. Species covered by these agreements are subject to protection under the EPBC Act.
Bilateral migratory bird agreements: • Japan–Australia Migratory Bird Agreement (JAMBA) • China–Australia Migratory Bird Agreement (CAMBA) • Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA)	These agreements recognise international concern for the protection of migratory birds and birds in danger of extinction. Species covered by these agreements are subject to protection under the EPBC Act.

3 description of the petroleum activity

3.1 Overview

Offshore infrastructure will produce and transport fluids (comprising gas, condensate, and produced water) from the subsea wells to the platform via subsea flowlines. The gas and condensate are dehydrated and dewatered at the platform, and then the dry gas and condensate are routed through the trunkline to the onshore endpoint.

The description of the petroleum activity is presented in the following sections:

- start-up and operation of the hydrocarbon system—includes the infrastructure (wells, flowlines, and trunkline) used for gathering and transporting hydrocarbon to the platform and the onshore end point; and other supporting infrastructure (umbilicals, pipelines, etc.) (Section 3.2)
- start-up and operation of the platform—includes various hydrocarbon processing and utility systems, as well as accommodation facilities, central control room (CCR), and helideck (Section 3.3).
- IMR—undertaken to ensure the integrity of the hydrocarbon system (Section 3.4)
- decommissioning—long-term planning for decommissioning of redundant infrastructure (Section 3.5)
- field support—includes the use of platform supply vessels, IMR vessel operations, and helicopters for personnel transfers (Section 3.6).

3.1.1 Location and Operational area

The location of the petroleum activities are described in Section 2.2 and shown in Figure 2-1 and Figure 2-2.

The Operational Area (OA) for the petroleum activity is defined as the:

- petroleum titles (WA-46-L, WA-47-L, WA-48-L, WA-49-L, WA-3-IL, WA-25-PL, TPL/25, PL 99)
- a 200 m wide corridor centred over the trunkline within Commonwealth and State waters.

It is within this OA that the petroleum activity defined within Section 4 of this EP will be undertaken. If required, CAPL will obtain any necessary permit or authorisation for works in areas of the OA that are outside of the petroleum titles described in this EP.

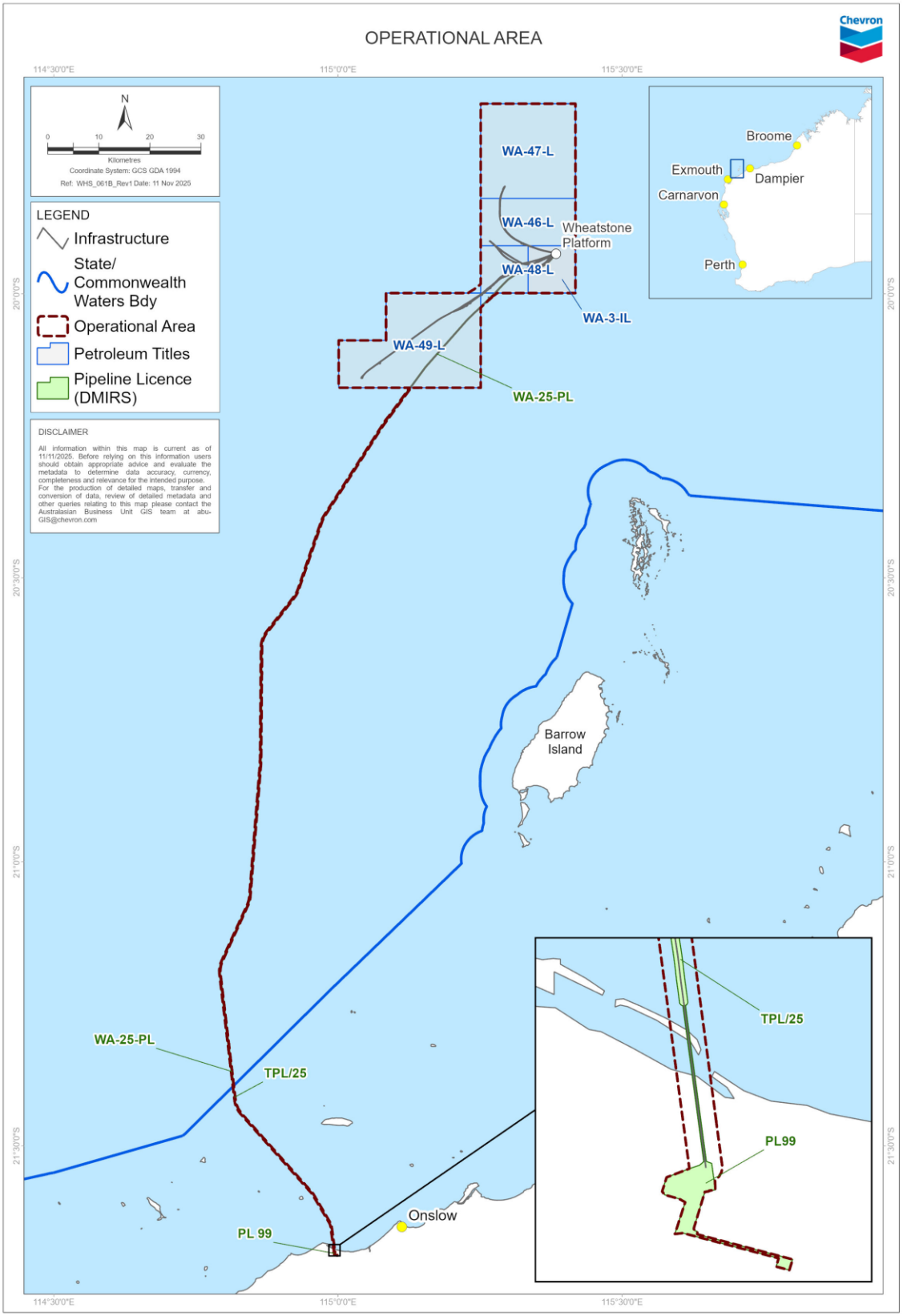


Figure 3-1: Operational Area

3.1.2 Timing

The Wheatstone and Iago field are expected to be operational for ~30 years, and the Julimar-Brunello field are expected to be operational for ~25 years. IMR activities may occur at any time during operations. Activities covered by this EP can occur 24 hours a day and 7 days a week.

3.2 Hydrocarbon system

3.2.1 Infrastructure

The hydrocarbon system includes the infrastructure for gathering and transporting hydrocarbons from the offshore production wells to the platform for processing, and then transferring the hydrocarbons to the onshore endpoint via the trunkline.

3.2.1.1 Wells and trees

Production from the Wheatstone and Iago fields occurs from nine Wheatstone and Iago wells (from the three drill centres WST-1, WST-3, IAG-1).

Production from the Julimar-Brunello field occurs from 11 wells prior to comingling at the BruA cross over manifold (XOM).

Each well includes a subsea tree structure connected to a central manifold structure in each drill centre. The operation and monitoring of the Wheatstone and Iago wells and trees are described further in Section 3.2.2.1.

The Wheatstone, Iago and Julimar-Brunello subsea well design includes a permanent downhole gauge to facilitate the downhole measurement of pressure and temperature, and a downhole safety valve.

The Wheatstone and Iago subsea wells systems comprise a wellhead, tubing head spool, and vertical tree system including a subsea control module, while the Julimar-Brunello subsea wells systems comprise a wellhead and horizontal tree.

Note: Although the production wells are described here, the construction of these wells and the installation of christmas trees and associated infrastructure are outside the scope of this EP (Section 1.1.1).

Table 3-1: Existing Production Well Locations

Petroleum Title	Well name - CAPL	Well Name - Woodside	Associated drill centre	Latitude	Longitude
Wheatstone Field					
WA-46-L	WST-1A		WST-1	19° 54' 19" S	115° 16' 05" E
WA-46-L	WST-1C			19° 54' 20" S	115° 16' 07" E
WA-46-L	WST-1D			19° 54' 20" S	115° 16' 07" E
WA-47-L	WST-3A ST1		WST-3	19° 48' 38" S	115° 17' 44" E
WA-47-L	WST-3C			19° 48' 40" S	115° 17' 44" E
WA-47-L	WST-3D			19° 48' 41" S	115° 17' 44" E
WA-47-L	WST-3F			19° 48' 42" S	115° 17' 43" E
Iago Field					
WA-48-L	IAG-1E		IAG-1	19° 56' 42" S	115° 19' 30" E
WA-48-L	IAG-1B ST1			19° 56' 41" S	115° 19' 28" E

Julimar-Brunello Field					
WA-49-L	BRU 1C	BruA-2A	BRUA	20°01’49.1571” S	115°12’05.64 E
WA-49-L	BRU 1E	BruA-3		20°01’47.8720” S	115°12’07.05 E
WA-49-L	BRU 1F	BruA-4 ST3		20°01’48.1207” S	115°12’07.60” E
WA-49-L	BRU 1B	BruA-5ST1		20°01’49.6633” S	115°12’05.76 E
WA-49-L	BRU 1G	BruA-6		20°01’48.4958” S	115°12’07.90 E
WA-49-L	JUA 1A	JULA-01	JULA	20°08’ 52.996” S	115°02’28.38 E
WA-49-L	JUA 1D	JULA-02		20°08’ 52.222” S	115°02’26.43 E
WA-49-L	JUA 1B	JULA-04		20°08’ 53.554” S	115°02’28.08 E
WA-49-L	JUA1E	JULA-G		20° 08’ 58.753” S	115°02’22.50 E
WA-49-L	JUB1A	JULA-B	JULB	20°06’ 27.931” S	115°03’23.48 E
WA-49-L	JUB1B	JULB-D		20°05’ 39.071” S	115°05’44.87 E

3.2.1.1.1 Environment Plan interface and well custody

When the Wheatstone, Iago, Julimar and Brunello wells are under the custodianship of the Wheatstone Operations work group, the wells will be operated and managed in accordance with this EP.

If a well integrity event occurs, the custodianship will be handed over to the ABU Wells work group and activities completed in accordance with the NOPSEMA-accepted *Wheatstone Project: Wheatstone Well Intervention and Infill Drilling Environment Plan* (Ref. 107).

Figure 3-2 shows the handover points when internal custodianship of the Wheatstone, Iago, Julimar and Brunello production wells are exchanged.

The well custodian is the work group that most recently took control of the well by signing the well handover (or equivalent) certificate. The work group taking custody will be provided with a complete set of ‘as-built’ and ‘as-left’ well details as per the well handover document.

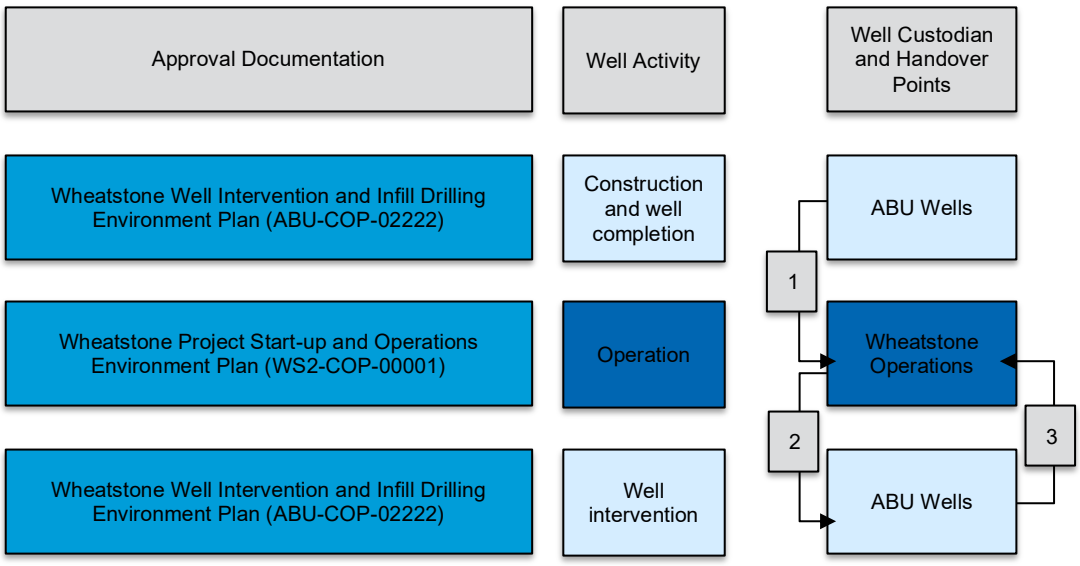


Figure 3-2: Well custody arrangements for Wheatstone, Iago, Julimar and Brunello production wells

3.2.1.2 Flowlines and pipelines

Each group of wells is connected to the platform by the flowlines and pipeline system[3]. The system transports production fluids from the wells to the platform through the production flowlines, and transports monoethylene glycol (MEG) or other chemicals (e.g. scale inhibitor) from the platform to the subsea system through pipelines. For the purposes of this EP, the jumpers, spools, and risers are collectively referred to as part of the flowlines and pipeline system.

The Wheatstone-Iago flowline and pipeline system and the Julimar-Brunello production system flowline is presented in Table 3-2.

Table 3-2: Indicative locations of flowline and pipeline system

Infrastructure Name	Latitude	Longitude
Wheatstone / Iago Field		
14" Utility Pipeline South between I1 and WP	19° 56' 47.639" S (start)	115° 19' 30.243" E (start)
	19° 55' 42.065" S (end)	115° 22' 56.773" E (end)
14" Utility Pipeline North between I2 and WP	19° 55' 39.851" S (start)	115° 22' 59.522" E (start)
	19° 55' 06.363" S (end)	115° 20' 38.695" E (end)
14" Utility Pipeline South between W1 and I1	19° 54' 25.728" S (start)	115° 16' 04.034" E (start)
	19° 56' 47.142" S (end)	115° 19' 27.121" E (end)
14" Utility Pipeline North between W2 and I2	19° 50' 59.200" S (start)	115° 17' 05.6289" E (start)
	19° 55' 04.789" S (end)	115° 20' 36.264" E (end)
	19° 48' 39.315" S (start)	115° 17' 37.991" E (start)

[3] The production lines are classified as flowlines; the MEG and utility lines are classified as pipelines.

Infrastructure Name	Latitude	Longitude
14" Utility Pipeline North between W3 and W2	19° 50' 56.588" S (end)	115° 17' 06.323" E (end)
24" Production Pipeline South between I1 and WP	19° 56' 47.178" S (start)	115° 19' 30.502" E (start)
	19° 55' 41.695" S (end)	115° 22' 56.728" E (end)
24" Production Pipeline South between W1 and I1	19° 54' 25.518" S (start)	115° 16' 04.629" E (start)
	19° 56' 46.610" S (end)	115° 19' 27.018" E (end)
24" Production Pipeline North between W3, W2, I2 and WP	19° 48' 39.812" S (start)	115° 17' 38.346" E (start)
	19° 55' 39.503" S (end)	115° 22' 59.499" E (end)
6" MEG Pipeline South between W1, I1 and WP	19° 54' 26.463" S (start)	115° 16' 03.562" E (start)
	19° 55' 42.475" S (end)	115° 22' 56.792" E (end)
6" MEG Pipeline North between W3, W2, I2 and WP	19° 48' 38.612" S (start)	115° 17' 37.416" E (start)
	19° 55' 40.119" S (end)	115° 22' 59.410" E (end)
Julimar-Brunello Field		
Julimar and Brunello production flowlines, MEG pipeline/ production flowline corridor	20°01'51.7586" S (start)	115°12'11.3265" E (start)
	19°55'45.776" S (end)	115°23'02.215" E (end)
1 x JDP2 Flowline / Umbilical Route	20° 01 '53.43" S (start) 20° 08 '52.917" S (end)	115° 12 '09.28" E (start) 115° 02 '27.23" E (end)
JUA1C to JUA1MMan01	20° 08' 59.75" S (start) 20° 08' 52.917" S (end)	115° 02' 24.59" E (start) 115° 02' 27.23" E (end)
JUA1E to JUA1MMan01	20° 08' 59.25" S (start) 20° 08' 52.917" S (end)	115° 02' 23.05" E (start) 115° 02' 27.23" E (end)
JUB1B-JULB MANILT	20° 05' 39.01" S (start) 20° 06' 26.41" S (mid) 20° 07 '36.11" S (end)	115° 05' 44.84" E (start) 115° 03' 24.02"E (mid) 115°04 '12.23" E (end)

3.2.1.3 Subsea production manifolds

There are 3 subsea production manifolds within the Wheatstone-Iago hydrocarbon system, and 3 subsea production manifolds and a crossover manifold within the Julimar-Brunello production system (Table 3-3).

Manifolds for the Wheatstone-Iago hydrocarbon system transfer well fluids from the Xmas trees to the corresponding pipeline termination structures. This enables gas condensate from each wellhead to be commingled via the production manifolds before entering the infield production flowlines.

The Wheatstone-Iago production manifolds are controlled by the Platform, via umbilicals, which carry electrical power and hydraulics to operate the manifold and Xmas tree valves, chemicals, and cabling to transmit communications signals.

The Julimar-Brunello manifolds are connected to individual wells via production jumpers, and transfer well fluids to the BruA crossover manifold. The BruA crossover manifold is controlled by the Platform via an umbilical and directs Julimar and Brunello production fluids to the Wheatstone Platform, via two flowlines.

Table 3-3: Locations and dimensions for the subsea production manifolds

Manifold	Latitude	Longitude
Wheatstone / Iago Field		
WST-1 Manifold	19°54'21.20" S	115°16'06.69" E
WST-3 Manifold	19°56'42.81" S	115°19'29.53" E
IAG-1 Manifold	19°48'40.34" S	115°17'43.33" E
Julimar-Brunello Field		
BruA manifold	20°01'49.0788" S	115°12'06.8670" E
BruA Crossover manifold (BruA XOM)	20°01'51.1115" S	115°12'09.0653" E
JULA manifold	20° 08 '52.917" S	115°02 '27.23" E
JULB manifold	20° 06' 26.41"S	115° 03' 24.02"E
Inline T Assembly	20°01'51.1115" S	115°12'09.0653" E

3.2.1.4 Umbilicals

Umbilicals for the hydrocarbon system run parallel to the flowlines and pipeline system, and carry electrical power and hydraulic fluids to operate and control the manifolds and trees, and cabling to transmit signals.

Umbilicals connected to the Julimar-Brunello production system also provide communications and chemical supplies between the platform and subsea components. The Julimar-Brunello production system umbilicals run between the platform and cross-over manifold through to wells.

Steel and electrical flying leads are connected from the manifold to the wells, and for the purposes of this EP, are collectively referred to as umbilicals.

3.2.1.5 Subsea valves

Control valves

The subsea control system includes various production control valves on the trees and subsea structures which are remotely operated from the platform CCR, which when actuated, release control fluids (further described in Section 3.2.2.3).

Isolation valves

SSIVs are installed on all incoming hydrocarbon flowlines and the export trunkline to isolate the subsea inventories in the unlikely event of an unplanned release. The SSIVs are located on the seabed, ~70 m away from the platform. Surface control subsurface safety valves (SCSSV) are part of the well infrastructure, while riser emergency shutdown valves (RESDVs) are provided for each incoming flowline and the trunkline (included as part of the platform infrastructure description, Section 3.3). The valves can be closed via a dedicated pushbutton in the CCR, or can close automatically (failsafe) on emergency shutdown scenarios as described in the Wheatstone Facilities Safety Cases (Ref. 116; Ref. 115) and summarised in the platform central control description (Section 3.3.2.9).

3.2.1.6 Trunkline

The trunkline, which is ~221 km long and ~44 inches in diameter, transports the commingled dry gas and condensate from the platform to the onshore facility. The

trunkline crosses other pipelines including Pluto, Jansz, and Gorgon in Commonwealth waters, and Roller Skate in State waters.

State waters and onshore

The State waters section of the trunkline is ~37 km long, begins at the State waters boundary, and includes trenched, stitch-rockdumped, and buried sections as it enters the shore approach into the microtunnel. The trunkline has been stabilised by a combination of pre-lay trenching with backfill and rock dump in State waters. The shore crossing microtunnel is ~1.2 km long, is supported by a concrete casing, and is routed up to the onshore beach valve. The subsea entry point (the offshore end) and the onshore end of the microtunnel are grouted with grout plugs.

The onshore trunkline section includes an ~1 km section between the microtunnel and the pig receiver station, upstream of the gas plant, and is shown in Figure 2-2. The onshore trunkline section is buried, either lying in between berms backfilled with soil, or trenched and backfilled. The embankment slopes are protected by rock and covered by a crushed rock surfacing. The onshore section includes the beach valve, pig receiver station and associated valves, and includes the adjacent area within the licence PL 99.

3.2.2 Start-up and operations

3.2.2.1 Wells and trees

The platform CCR (Section 3.3.2.9) provides remote operation and monitoring of the hydrocarbon system, including various parameters such as flow, temperature and pressure. Well integrity is managed by continuous surveillance, monitoring and periodic IMR of the wells to ensure infrastructure and operations are within pre-established safe limits.

3.2.2.2 Flowlines and trunkline

Typically, new flowlines are nitrogen filled and this will be purged to the platform flare system during initial start-up.

3.2.2.3 Subsea valves

Control of the hydrocarbon system includes the use of valves on the manifolds, trees, and PTSs via the umbilicals. Small quantities of control fluids are discharged from subsea valve actuations. The frequency of valve actuations may range from less than daily to up to several times a day for each valve, are non-continuous and of short duration (e.g. less than a minute).

Discharge volumes are expected to range from 0.001–0.03 m^3 per discharge, with predicted total volumes from any tree or manifold expected to be ~1–5 m^3 per year, equating to a total of ~15–120 m^3 per year (for the six drill centres and 20 wells covered in this EP).

3.2.3 Chemical Usage

Chemicals that may be subsea during IMR activities are outlined in Section 3.4.1.1.

3.3 Platform

3.3.1 Infrastructure and facilities

The platform dehydrates and dewaters the production fluids received from the Wheatstone and Iago hydrocarbon system and Julimar-Brunello field production systems, before transferring the dry gas and condensate into the trunkline. To achieve this, the platform includes various hydrocarbon processes, utility, and support systems to separate the gas from liquids, to dry the gas, and dewater the condensate. The hydrocarbon system operations are controlled from the platform.

The platform typically accommodates ~96 people on board (POB) during normal operations; and can accommodate up to 104 POB.

Safety and navigational lighting, as well as emergency lighting, illuminates the platform. Two pedestal cranes transfer and handle supplies and equipment, such as portable tanks for production chemicals, while bunkering hoses are used for MEG, tri-ethylene glycol (TEG), diesel, and potable water. Each crane pedestal stores ~135 m^3 of diesel. Laboratory facilities are provided for various analyses. A helideck is used for personnel transfer. The lower deck of the topsides is ~28 m above sea level.

Table 3-4: Platform Location

Platform	Latitude	Longitude	Water depth (~m)
Wheatstone Platform	19°55′45.74″ S	115°23′02.29″ E	71

3.3.2 Start-up and operations

3.3.2.1 Platform hydrocarbon processing

The following sections describe the hydrocarbon processing system on the platform and are indicative of normal operations. Where conditions differ from normal operations (potentially through well clean-up, well testing, start-up and commissioning processes), these differences are noted, where relevant. The normal production rate for the platform is ~1,700–2,100 million standard cubic feet per day (MMscfd).

3.3.2.2 Compression

As the reservoir depletes and the pressure within it is reduced, the compression system will ensure production targets are met. Two high efficiency open-cycle aero derivative gas turbines will supply the required compression duty for the platform. Reservoir predictions indicate that compression can be bypassed initially (free-flow), before switching to partial compression with one compressor operating at part load. In the longer term (estimated to commence ~10 years post start up) full compression, involving both compressors running, will be required. Compressors may also be used for periods during start-up processes.

3.3.2.3 Flare system

The platform has two safety-critical flare systems for the disposal of flammable gases—a high-pressure (HP) flare for high-pressure process upset, relief, and blowdown loads, and a low-pressure (LP) flare operating continuously to dispose of low-pressure waste gas from the process.

Waste gas streams routed to the LP flare on a continuous basis include:

- produced water system offgas
- TEG regeneration offgas
- stripping gas
- closed drains drum offgas
- compressor dry seals gas.

These waste streams (particularly the produced water system and TEG regeneration system offgas (when stripping is not required) will be mainly inert, having a high water and carbon dioxide content (Ref. 114).

The HP flare header disposes of hydrocarbons from the following streams:

- subsea flowline depressurisation
- field and individual flowline re-start
- system pressure relief and blowdown
- discharge from separators during overpressure scenarios.

The flare stack includes a constantly lit pilot, to prevent the need for cold venting, and purge gas will be sent to the flare to prevent oxygen ingress. Fuel gas will be the primary purge gas for the LP flare, whilst nitrogen will be the primary purge gas for the HP flare.

During well clean-up, initial start-up, and operational start-ups at the platform, additional HP flaring may be required until the systems are commissioned, have stabilised, and the required stream compositions and process conditions are met. Shutdowns (equipment, isolation, and depressurisation) during operations will also deliver gas through the flares.

3.3.2.4 Power generation

Power is generated by three high efficiency aero derivative gas turbines, with waste heat recovery provided by a hot oil system. The units are dual-fuelled, to allow diesel operation in case of loss of fuel gas. The turbine generator configuration is 3 × 50% rated (typically two operating, one spare). Additionally, an emergency diesel generator and a black-start generator are available for power generation, and temporary generators may also be used.

3.3.2.5 Chemical injection

A number of chemicals are used in the topsides processing system and subsea system. The chemicals typically required include: MEG (topsides and subsea); TEG (topsides); corrosion inhibitor (trunkline, J tubes and tempered water); scale inhibitor (subsea); demulsifier (topsides); reverse demulsifier (topsides); antifoam (topsides); biocide (topsides slops tank, fuel storage, J tubes and tempered water); sodium hypochlorite, water clarifier and calcite (topsides); pH buffer and alkalinity adjustment (topsides and MEG riser subsea); MEG oxygen scavenger (topsides); methanol, which may be used to prevent hydrates in future operations (subsea).

These chemicals are generally used in reactions in the production process, or, in the case of TEG, used on the topsides for dehydration, and MEG, regenerated. Sodium hypochlorite is generated on the platform by the electrolytic decomposition of sea water, and minor quantities are injected into various piping, tanks, systems, and caissons to control and minimise marine growth.

3.3.2.6 Produced water treatment

Produced Water (PW) brought up from the hydrocarbon-bearing strata during the extraction of gas and condensate from the wells is physically separated from the well fluids at the platform, treated through a tiered treatment system, and discharged to the ocean through a caisson ~45 m below the lowest astronomical tide (LAT).

The treatment system includes primary treatment using hydrocyclones and a secondary treatment system comprising induced gas flotation (IGF) units with fuel gas injection. A slipstream can also be sent to a tertiary treatment system, comprising an organoclay filter for hydrocarbon adsorption, before recombining with the secondary treatment effluent and discharge through the PW caisson. The platform is designed to process up to ~265 m^3/h of PW.

Well clean-up

Upon the initial flow from each well to the platform, MEG is injected and the MEG/PW mix will contain traces of residual contaminants from previous drilling activities, requiring clean-up at the platform.

Typically, MEG received back to the platform as a result of unplanned shutdown and restart will be collected in the rich MEG tank and regenerated. However, during well clean-ups this is not possible due to the presence of drilling completion fluids. During these periods MEG/PW mix is treated through the PW treatment system or equivalent (such as a temporary treatment package containing infrastructure such as filtration, coalescers and carbon adsorption beds) and discharged via the produced water caisson.

3.3.2.7 Water and wastewater systems

Seawater system and cooling water

Seawater is drawn by seawater lift pumps located in the seawater lift caissons and used as: a cooling medium for heat exchange within the closed-loop tempered water circuit; source water for potable water generation; make-up firewater; and source water for generating the sodium hypochlorite solution. Seawater is continuously injected with hypochlorite to prevent biofouling of the facilities that are exposed to seawater. Cooling water (CW) from the seawater system is discharged through a caisson ~40 m below LAT. Reverse osmosis (RO) units produce potable water from sea water and the rejected brine is discharged through a caisson.

Sewage treatment

The platform sewage treatment unit is designed to treat sewage (with added greywater for system optimisation) generated by POB. The unit includes maceration, before discharging the wastewater ~40 m below LAT through a sewage discharge caisson.

Food waste

The kitchen waste system includes a macerator, with discharges to the ocean through a dedicated discharge pipe, ~40 m below LAT. Alternatively, food waste may be taken to shore for disposal.

Drains system

The open drains system collects deck drainage (firewater, stormwater, and washdown water), drip trays, and sample returns. Non-contaminated streams (such as rainwater from the roof of the living quarters) are sent directly to the open drains caisson. Potentially contaminated streams are routed to the slops tank, where they

undergo coarse oil-in-water (OIW) separation, with the water being sent to a coalescer for further oil removal, then through the open drains caisson. Oil from the slops tank is reprocessed or taken as waste from the platform.

For high water flows beyond the capacity of the slops tank (e.g. storm or firewater deluge), the first flush is recovered to the slops tank but thereafter overflows directly to the open drains caisson (after the first flush, the drainage water is considered to be uncontaminated drainage water). The open drains system will also collect a degree of deluge.

The closed drains system collects hazardous wastes from the processing system and routes the hazardous waste to the closed drains drum. The closed drains system also drains and collects liquids from equipment and piping during maintenance. Condensate is recovered to the process system and collected water is directed to the PW treatment system.

3.3.2.8 Fire systems

The fire and gas system is used for detecting hydrocarbon gas and fire, and fires associated with non-process utilities, such as diesel, hot oil, lube/mineral oil, and transformer oil. Detectors include hydrogen gas detectors, flame detectors, smoke detectors, and heat detectors. The active fire protection system components include the firewater system, as well as deluge system, hose reels and extinguishers, and fire suppression systems. Fire-fighting foam is used to dose the firewater system. The open drains system has been sized to contain the first flush of firewater deluge, including the foam. During maintenance, the fire system will be tested several times per year resulting in some foam being discharged through the grated decks to the ocean. To ensure the firewater system is maintained in working order and chlorine levels are adequate to minimise fouling within the system, chlorine is injected and water within the system is flushed regularly resulting in discharge of chlorinated water.

3.3.2.9 Central control

Control and monitoring

The hydrocarbon system is controlled and monitored from the platform CCR. All subsea system process valves and instrumentation functions required to carry out production operations are operated by remote control from the platform CCR. Remote operation can also occur from the onshore plant if required.

In the CCR, various production data are monitored from probes and other equipment at the wells, trees, flowlines, and platform hydrocarbon processing systems. This monitoring can include process conditions, flow rates, pressure, temperature, sand production, erosion rates, and subsea and topsides systems equipment integrity and operational status. Well conditions and general integrity of the wells can be determined through the monitoring of downhole and tree-mounted instrumentation data at the CCR.

Shutdowns

Emergency shutdowns of the platform and hydrocarbon system (including individual wells and flowlines) can be activated automatically from trips and emergencies, or by CCR pushbutton, as per the Safety Case (Ref. 116; Ref. 115). Inventories are isolated through valve closures (at the well SCSSVs, flowlines SSIVs, and platform RESDVs) and equipment in process areas of the platform are also isolated through shutdown valves.

Individual equipment shutdowns can also occur at the platform if individual equipment items/packaged equipment are tripped when operating conditions outside design limits are detected. The equipment shutdown condition is activated automatically by the process or cascaded from a higher level shutdown.

If a trunkline release is confirmed, the platform could be shutdown, wells shut in, and the trunkline depressurised to the LNG Plant, through the production trains and/or blowdown via the onshore flare.

3.3.2.10 Platform maintenance

Platform maintenance preserves the safety, reliability, and integrity of the facility and maintains efficient conditions. Maintenance and inspection activities are extensive, and include risk-based inspection (RBI), predictive maintenance, condition monitoring, and generic maintenance. Maintenance on the platform is wide-ranging and can include breaking containment of vessels, opening lines, topping up and changing over fluids, draining water systems, testing valve function, changing filters, localised surface abrasive blasting and painting, general cleaning, and pressure cleaning.

3.4 Inspections, maintenance, and repairs

Any disturbance related to IMR activities will be contained within the Trunkline Direct Disturbance Footprint per MS 873 conditions or the OA defined in this EP. Upstream of the platform, a marine disturbance footprint of 100 m (50 m either side of pipeline centre line) is not expected to be exceeded during IMR activities.

3.4.1 Subsea

Section 572(2) of the OPGGS Act requires a titleholder to maintain in good condition and repair all structures, equipment, and other property that is within the title area and is used in connection with the operations authorised by the title.

IMR is undertaken to ensure that the integrity of the hydrocarbon system is maintained at or above acceptable standards. IMR activities may occur at any time during operations, including during start-up and operations.

The intent of Section 572(2) relates to ensuring that property is fit for purpose and is able to be removed when neither used, nor to be used, in connection with the operations (Ref. 374).

Subsea IMR typically requires the support of a vessel; these vessel operations are covered within Section 3.6.1.

3.4.1.1 Inspections

Subsea inspections provide assurance that infrastructure is being maintained and operated according to design and proactively identify maintenance or repair activities that may be required. Inspection generally involves the use of a vessel travelling along the route of the subsea system with an autonomous underwater vehicle (AUV) or remotely operated vehicle (ROV) (and in some cases, divers).

Inspections will be undertaken in accordance with the *Julimar Brunello Subsea and Pipelines System Inspection, Monitoring Maintenance and Repair Plan* (Ref. 493) and the *Wheatstone Upstream Subsea and Pipeline System Inspection and Monitoring Plan* (Ref. 103) (IM Plans). Inspections are risk based and are typically conducted more frequently (e.g. one to three years) during early operations, with the frequency likely to decrease over time during steady-state operations, depending on previous inspection results. Inspection techniques may include:

- Visual inspections (general and/or close) - may involve ROVs or AUVs deployed from a vessel both crewed and uncrewed; may also involve divers and a dive support vessel
- Marine acoustic surveys - may include side side-scan sonar (SSS) and multibeam echo sounders (MBES), and are typically done from a vessel using towed acoustic instruments, ROVs, or AUVs
- non-destructive testing - may include ultrasonic testing and electrical resistance testing, which are typically undertaken using an ROV or AUV deployed from a vessel
- cathodic protection measurements - Completed using ROVs or AUVs and conductivity probes or by making visual assessments of anode wastage. Anode sampling may be undertaken.
- fatigue monitoring/inspection - where required, fatigue monitoring equipment will be installed, inspected, and/or retrieved by a ROV deployed from a vessel.
- subsea pigging - intelligent pigging (IP) may be used to inspect the trunkline condition. Conditioning (cleaning or batch) pigging is typically required before an IP inspection run and requires a pig to sweep any debris and gauge the pipeline to ensure that the pipeline is in suitable condition for a subsequent IP inspection. Batch pigging may also be required to distribute chemicals (e.g. corrosion inhibitor).

  Pigs are launched from the platform through the trunkline to the onshore pig receiver. Tethered IP may be used to inspect the MEG risers wall thickness due to the inability to externally inspect areas of concern.

  In exceptional circumstances, pigging may also be conducted on the flowlines, with temporary pig launchers used on the flowlines and pigs received at the platform.
- other - if required, the following activities may be undertaken, such as laser surveys, seabed sampling surveys including minor grabs/cores, water sampling surveys and marine growth sampling.

3.4.1.2 Monitoring

Monitoring activities may include process composition testing, acoustic sand detectors, erosion probes, ER probes, UT sensor monitoring, electro hydraulic umbilical (EHU) insulation resistance (equipment health monitoring), MEG and/or chemical dosage, metocean and geological seismic monitoring.

3.4.1.3 Maintenance and repair

Maintenance and repair activities, including equipment change-out, will be conducted during the operational life of the Project to:

- prevent deterioration and/or failure of infrastructure
- maintain reliability and performance of infrastructure
- ensure infrastructure is adequately maintained to enable the potential for future removal.

Maintenance and repair activities are typically conducted in response to inspection findings, engineering analyses, and/or external events. The activities are likely to be performed by ROV from the IMR vessel (or similar), or, in exceptional circumstances, may require the use of a larger vessel. IMR activities may involve

the occasional subsea discharge of small quantities of fluids (typically MEG, hydraulic fluids, control fluids, well fluids, gas, condensate, and dyes) and/or minor seabed disturbances.

There are no planned interventions downstream of the platform (i.e. along the trunkline between the platform and onshore LNG plant) during operations. The trunkline is designed and was installed for maintenance-free operation for at least a 30-year period.

Maintenance and minor repairs (and any associated testing) may include, but are not limited to:

- Leak and pressure testing
- Flushing of chemical hydraulic fluid lines
- Equipment change-outs and repairs - the subsea system (upstream of the platform) includes some modular and retrievable items. Upon confirmation of degradation or failure, retrievable units may be recovered and replaced with a new module, typically performed with the aid of an ROV or remotely operated tool. Before performing equipment change-outs, the bleeding of equipment such as valves may be required. No equipment change-outs are expected along the trunkline. Types of equipment that may be changed include, but is not limited to:
  - subsea control module (SCM) or Control Distribution Unit (CDU) replacement
  - replacement of subsea pipeline equipment or control modules, such as choke modules, tree caps, spools, flying leads (EFL/HFL) or power and control distribution equipment.
  - chemical injection metering valve insert replacement
  - hotstab change out
  - umbilical/ jumper replacement, relocation, repair and recovery
  - coating repairs
- Installation of foundations and/or mudmats - to support equipment and facilitate maintenance and repair activities
- Stabilisation / span correction - Stabilisation may be required to manage spanning and scouring around the subsea system and may involve activities such as installation of mattresses, grout bags, rocks, frond mats or similar stabilisers, or trenching. Stabilisation improvements of the trunkline is an unplanned and highly improbable activity.
- Excavation for intervention– to undertake subsea IMR, localised excavation may be conducted directly adjacent to the subsea system allowing access to buried or partly buried infrastructure. Typically, this is conducted by jetting and/or digging equipment from an ROV, vessel, or by using divers, depending on the location, depth, and seabed characteristics. This task generally precedes valve function testing and equipment change-out, however excavation is not expected to be required for every intervention.
- Marine growth and calcareous deposit removal - Marine growth and calcareous deposits may be removed using a brush / scraper system and/or water jetting from an AUV or ROV or by divers, generally with potable water or sea water. In some cases, items exhibiting calcareous deposit accumulation may require acid washing or soaking (typically using water-soluble sulfamic acid or similar). This

task generally precedes equipment change-out activities, where operation of or access to the equipment/connection hubs is hindered by marine growth or calcareous deposits.

- Maintenance of cathodic protection systems / additional anodes - cathodic protection equipment may be added to, or placed adjacent to, production pipelines or structures using a vessel and ROV spread. Anodes are expected to last for the design life of the pipeline they are protecting. Anode replacement, although not planned, would be undertaken by ROV. If continuity straps are missing or broken, electrical continuity may be restored using an ROV to replace the straps.
- Valve function testing - Function testing is planned for remotely operated valves with critical functions (e.g. emergency shutdown valves). Valve function testing can be performed from the platform with observations by the ROV or manually performed by ROV. Routine testing results in small quantities of fluids being discharged (Refer to Table 3-6).

Approximate Seabed Disturbances

Approximate seabed disturbances associated with targeted IMR activities are included in Table 3-5:

Table 3-5: Approximate seabed disturbances associated with IMR activities

Activity	Approximate Seabed Disturbance
Equipment change-outs and repairs	Disturbance from replacement of subsea equipment such as a section of spool, flying lead or jumper – sections up to ~100 m long (i.e. max distance between subsea manifold and tree) within a ~5 m 'touch down' corridor to allow positioning of the spool or jumper.
Stabilisation / span correction	Placement of grout bags (~1 m^2) Concrete mattresses (~18 m^2) or rock for pipeline span correction, protection and stabilisation Span rectification (~100 m^2)
Sediment excavation	Up to 3 m^3 (if removed by ROV)
Maintenance of cathodic protection systems / additional anodes	Anode skid replacement (~8 m^2) CP anode placement or remediation (~50 m^2)
Major pipeline repair	Up to ~800 m^2 of seabed disturbance (Refer to Section 7.3.1)
Seabed sampling surveys	Grabs/cores typically disturb 0.1 m^2 of seabed per sample.
General	Placement of ROV tool baskets (~15 m^2) Placement of equipment / tools (up to 10 m^2) DP transponders (~2 m^2) ROV Beacons (1 m^2)

IMR Discharges

Estimated discharge compositions and volumes for typical IMR activities are included in Table 3-6:

Table 3-6: Approximate discharge types and volumes associated with IMR activities

Approximate Discharge Compositions and Volumes	
Pressure and leak testing	Chemical dye releases (~10–20 L).

Flushing		Residual gas and condensate or chemical release (preservation fluids) volume depends on injection port size, component geometry, and pumping rates.
Equipment change outs / installation:	Hotstab / coldstab interventions and valve function testing; Hot stab change-out	Hydraulic control fluid releases (~5–10 L) Gas and condensate (<10 L).
	SCM changeout	Typical releases: • acid (~400 L) • subsea control fluid (~10 L).
	Umbilical replacement	Typical releases: • hydraulic fluid (<10 L) • MEG (<10 L) • scale inhibitor (<10 L).
	Choke change out	Gas and condensate (<10 L) MEG (~280 L).
	Intervention isolations and subsea equipment replacements	Hydrocarbon gas and/or liquid (~1–10 m^3) MEG (~100 L) Scale inhibitor (~50 L)
	Logic box installation	Hydraulic fluid (~10 L)
Stabilisation / span correction		Grout bag filling/hose flush (~20–200 L).
Marine growth and calcareous deposit removal		Acid-water mix (~20–200 L)
Pressure release from Platform Steel Gravity Structure (SGS)		Hydrogen gas Magnetite slurry (~10 L)
Subsea pigging		Gas and condensate (~1–10 m^3) MEG (~100 L)
Hydrate remediation		Gas and condensate (~5 m^3)
General		Dilute preservation fluids: corrosion inhibitor, oxygen scavenger, biocide, pH buffer, scale inhibitor (~5–10 L)
		Chemical dye (~10–20 L)
		Hydraulic fluid (~20–100 L)

3.4.1.4 Major repairs

This EP has allowed for scenarios where major repairs of the pipeline system (including flowlines, pipelines and umbilicals) may be required.

CAPL has prepared for a potential major repair event by implementing the Emergency Pipeline Repair System (EPRS). The EPRS delivers a set of repair procedures, common repair equipment, and specific equipment for the Wheatstone trunkline. The EPRS also includes methodologies for the repair of support infrastructure such as umbilicals and pipelines.

The target repair duration is ~180 days depending on vessel availability. The duration takes into account mobilisation of equipment and vessels, in situ repair, to recommissioning. Several vessels are likely to be involved to conduct and support the repair works or provide temporary power and controls to maintain system operability and reliability.

As major repair of a pipeline is the most complex major repair activity, this has been described in detail below.

Emergency Pipeline Repair System (EPRS)

The EPRS includes a combination of equipment which, when used together, enables a section of production pipeline to be cut out and replaced. It is deployed off the back deck of a support vessel and supported with ROVs. The EPRS is preserved, maintained and stored in a warehouse in Perth until required. The EPRS equipment includes:

- hydraulic-actuated pipeline lifting and repair equipment deployment frames
- pipe preparation tools, including but not limited to, coating removal, weld seam removal, end preparation, and water blasting equipment
- pipeline specific repair clamps and flange adaptors.

Depending on the seabed conditions at the repair location, the seabed area immediately surrounding the pipeline system infrastructure may be disturbed if it is determined that pipeline requires deburial or removal of rock prior to repair, or use of concrete mattresses or rock stabilisation measures post-repair.

The EPRS equipment may be deployed for the flowlines or trunkline where the pipeline (or section of pipeline) does not exceed the limitations of its design (i.e. not within water depths of <20 m).

Pipeline temporary decommissioning

Following a major defect or full bore rupture, the field would be shut-in, and the pipeline allowed to naturally depressurise to subsea ambient pressure, resulting in free-flooding of the pipeline with sea water.

The pipelines would then be flooded with sea water inhibited with chemical additives (including biocide and oxygen scavenger) that will propel a flooding pig towards the defect location. Flooding may be undertaken from both ends of the pipeline, resulting in a release of sea water, gas, condensate, and rich MEG to the marine environment at the location of the defect.

Pipeline repair

The EPRS equipment is operated using ROVs, controlled from the support vessel. Two ROVs are expected to be required. The ROVs are electrically powered from the vessel and deliver hydraulic pressure to the operating parts of the repair system.

Pipeline repair includes the following stages:

- pre-deployment survey
- remove damaged section
- EPRS deployment
- installation of new replacement section
- pipeline stabilisation (if required).

<u>Pre-deployment survey</u>

Prior to deployment of the EPRS, a number of different surveys may be undertaken. These surveys may be undertaken up to 500 m away from the pipeline. The types of survey will depend on the location and event causing the pipeline defect, but may include:

- side scan sonar (SSS) or multibeam echo sounder (MBES) or similar

- ROV
- piezo cone penetration test (PCPT) or similar.

PCPT involves pushing a probe into the seabed to test soil characteristics and strengths. Up to three PCPTs may be required at each of the eight mudmat locations. The tests are expected to comprise a 100 mm diameter cone penetration test to a depth of 5 m.

Removal of damaged sections

If required, the damaged section will undergo pipeline deburial or have rock stabilisation material physically removed. The damaged section of the pipeline will then be cut using appropriate cutting tools.

Once cut, the damaged section of pipeline will be wet stored on the seabed whilst it is cut into smaller sections (~3 m lengths), then loaded into debris removal baskets and transferred back to the vessel.

EPRS deployment

Subsea transponders may be deployed to ensure accurate seabed positioning of the EPRS. The deployment of transponders may result in localised seabed disturbance of approximately 1–2 m^2 (per transponder). Once no longer needed these are recovered back to the vessel using an ROV. The EPRS lifting frames and cradles for repositioning of the pipeline are then deployed and installed.

The length of pipeline over which a typical repair will take place is ~300 m. Over this length, the areas and depths of seabed expected to be disturbed during a repair include:

- at the four pipe lift frame locations, ~450 m^2 of surficial seabed will be disturbed by the pipe lift frame mudmats to an approximate maximum depth of ~4.5 m by the skirt foundations of these mudmats
- at the pipe end repair location, ~250 m^2 of surficial seabed will be disturbed by the repair pipeline flange adaptor (PFA) deployment frame mudmat skirts (up to ~0.3 m depth)
- in the vicinity of the repair location, ~100 m^2 of seabed will be required for temporary wet storage of materials and equipment during the repair operation.

Installation of new replacement section

Once the damaged section of pipeline is removed, the pipeline ends are prepared (coating and weld seams removed) to allow PFA installation. The PFA stud bolts are then tensioned with the flange bolting systems and subsequently back seal tested. The PFAs are then activated to complete the repair.

The entire pipeline is then typically subjected to a hydrostatic leak testing. If the leak testing fails, the repair will need to be rectified, and re-installed. The leak test may comprise flooding, gauging, and/or cleaning pigs, but is typically performed using a small water-winning/filtration and chemical injection spread, and high-pressure pumping equipment, and will use an onshore spread that will differ depending on the pipeline.

Pipeline stabilisation

Depending on the seabed conditions at the repair location, additional seabed area may be disturbed by permanent concrete mattresses and post-repair rock stabilisation measures. However, this is location specific and thus will need to be determined at the time of event.

Pipeline recommissioning

Following a successful hydrostatic leak test, the pipeline must be recommissioned via a dewatering and conditioning pig train. The conditioning pig train is expected to comprise slugs of compressed air, treated potable water, and MEG.

The pipeline contents will be discharged subsea via the platform.

3.4.2 Onshore

3.4.2.1 Inspections

Most of the onshore section of the trunkline is buried until it emerges above ground, upstream of the onshore endpoint. Internal inspection of the trunkline in the microtunnel and onshore section is typically via IP.

Visual inspection of the onshore section is limited as the pipeline is mostly buried. General visual inspection of the exposed section of trunkline and the surrounding PL 99 pipeline licence area is conducted in accordance with the *Wheatstone Upstream Subsea and Pipeline System Inspection and Monitoring Plan* (Ref. 103).

With the exception of a 'soil to air interface' inspection (typically only completed once every five years), onshore inspections do not require the removal of pipeline top-cover. For the 'soil to air interface' inspection, a small bell-hole of ~2 m length by ~1 m width by ~0.5 height, may be excavated. Where excavation of soil is required, soil will be stockpiled, and then reinstated. This type of inspection may take up to two days to complete.

3.4.2.2 Maintenance and repair

Maintenance of the onshore trunkline section can include CP system maintenance, coating repair, maintenance pigging (from the platform), as well as maintenance of access ways, pig receiver station, valves and associated auxiliaries, and instrumentation. The maintenance activities for the pig traps typically include the greasing of hinges, UT for detection of internal corrosion, and maintenance of the pig signaller.

Trunkline repairs are not planned activities; they are triggered by inspection or maintenance activity findings and are then scheduled according to severity and risk. For repair of the buried onshore sections, the trunkline will typically be accessed from the side, requiring localised excavation work to remove backfilled soil in which the pipeline is housed. Surface treatment and work on the outer surface of the onshore section may be required in exceptional circumstances. If the pipeline is damaged and requires repair, temporary clamps may be installed on damaged sections, and onshore pipe section removal and replacement may be conducted in the event of failure, which will require heavy machinery to access the site. Potential onshore repair activities that may be undertaken during trunkline operations are described in Table 3-7.

Any onshore trunkline repair activities described above are only relevant to the ~1 km section of trunkline between the end of the microtunnel and the onshore end point (Figure 2-2). Any defects or leaks within the buried microtunnel section cannot be repaired; therefore, a repair would involve a new microtunnel section. If required, this scope would be covered under a separate EP.

Table 3-7: Onshore trunkline repairs

Repair	Description

Repair of pipeline top-cover	If the removal of pipeline top-cover is required (e.g. for repairs), the pipeline will be located by 'potholing', which is an exploratory excavation using methods that may include hand tools, water-jet and vacuum excavation, or pure suction excavation. Once potholing has revealed the buried pipe, mechanical and/or manual excavation methods may be used to expose the section of pipeline. A bell-hole for a pipeline repair may be up to ~24 m length by ~5 m wide, by ~0.5 m depth (these dimensions are estimated based on exposing two pipe joints). Where excavation of soil is required, soil will be stockpiled on site for future use (e.g. reinstatement). Accidental pipe exposure (e.g. from washout or flooding) may require backfill, using a soft or hard substrate depending on need.
Replacement of equipment	Equipment at the pig receiver station may need to be replaced or upgraded during its operational life.
Design modifications	During the operational life of the pipelines, design modifications and upgrades to the pig receiver station or its equipment may be undertaken to improve efficiency.
Repair of damaged pipeline	If repair and replacement of a section of pipeline is required, the damaged section will undergo pipeline deburial (via localised top-cover removal). The pipeline will be depressurised, and the damaged section clamped, or cut using appropriate cutting tools, and then removed. The new section of pipeline is then installed, welded, and typically leak tested. Pipeline top-cover is then reinstated.

Onshore IMR activities may require the use of vehicles for transporting personnel, tools, equipment, and waste. Excavators, cranes, vehicles, and other equipment may be used if clamping is required. Maintenance and repair activities are expected to be conducted during daylight hours. However, depending on the severity and risk, repair works may be undertaken 24 hours a day. Portable lighting and diesel generators may be needed for short durations if night activities are required. Onshore IMR activities may require the use of hazardous materials including diesel, grease, lubricants, or hydraulic fluids.

3.5 Decommissioning

Under Section 270(3)(c) of the OPGGS Act, before a title can be surrendered, all property brought into a title area must be removed or arrangements that are satisfactory to NOPSEMA must be made in relation to the property. Section 572(3) of the OPGGS Act also requires a titleholder to remove all property that is within the title area and is neither used nor to be used in connection with the operations authorised by the title.

Similarly, Section 98(3) of the *Petroleum (Submerged Lands) Act 1982* (PSL Act) (Cth) and Section 38(c) of the *Petroleum Pipelines Act 1969* (PP Act) (Cth) require the operator to decommission and remove all structures, equipment, and other property from petroleum activity sites. The base case is for full decommissioning and removal of all infrastructure brought into the title area, however exceptions to this requirement may be considered by the Minister on a case-by-case basis (Ref. 178).

3.5.1 End of facility life

As described in Section 3.1.2, the operational design life for the Wheatstone and Iago field development is expected to be ~30 years and the Julimar-Brunello field is expected to be operational for ~25 years. Therefore, no end of facility life (EOFL) decommissioning activities for the subsea or onshore infrastructure is scheduled to occur within the 5-year in-force period of this EP.

Prior to any EOFL decommissioning CAPL will submit a Decommissioning EP to NOPSEMA and DMPE that will demonstrate that the impacts and risks associated with field decommissioning activities are reduced to ALARP and acceptable levels. While the requirement for complete removal of property will be considered the base case within any Decommissioning EP (as per the requirements of section 572(3) of the OPGGS Act, section 98(3) of the PSL Act and section 38(c) of the PP Act), alternative arrangements that may be satisfactory are ones that deliver equal or better environmental, safety and well integrity outcomes compared to complete removal (Ref. 192). The Decommissioning EP will be developed to meet the requirements of the OPGGS Act and OPGGS(E)R, PSL Act and PSLER, PP Act and PPER, as well as any additional relevant legislation (e.g. *Environment Protection (Sea Dumping) Act 1981* (Cth)) or guidelines (e.g. Ref. 374; Ref. 192; Ref. 178) in force at the time.

3.5.2 Subsea Inventory

To assist with the long-term planning for decommissioning an internal inventory of subsea property is maintained by CAPL. The subsea inventory will include property that is “operational” by the Wheatstone Project. A static summary of the inventory has been provided in appendix b.

Subsea assets classified as abandoned (with relevant supporting regulator documentation) are not included within the subsea inventory.

3.5.3 Removal of property

In accordance with Section 572(3) of the OPGGS Act, removal of property will be undertaken throughout operations when property is neither used, nor to be used, in connection with the operations. However, NOPSEMA recognises that removal may not always be practical at the time when property is neither used, nor to be used (Ref. 374).

The process that CAPL will follow to determine where a deviation from the requirement to remove property at the point in time that it is neither used nor to be used is appropriate, includes consideration of several criteria. Deferral of removal may be considered by CAPL if:

- redundant equipment is incorporated within or located close to live infrastructure which introduces additional complexities and risks that can be avoided during EOFL decommissioning
- while subsea property is in situ, the risks to other marine users associated with its physical presence are low
- the environmental risks when leaving redundant infrastructure in-situ under current operations is considered to be low
- the cost of standalone retrieval work scopes are considered disproportionate when considering the risks of retrieval during current operations versus risk of extending duration in-situ.

If after applying the above criteria, any redundant property is to remain in-situ within the title area for decommissioning as part of EOFL, it will be recorded in the subsea inventory as a “non-operated asset” (refer to Section 3.5.2), and will be subject to inspections to ensure that the property does not degrade to a state that would prevent future removal (refer to Section 3.4). This ongoing inspection, monitoring, and maintenance of non-operated assets is also a requirement of DMPE (Ref. 178).

3.5.4 Onshore closure planning

PL 99 extends over the onshore trunkline (Figure 2-2). The trunkline exits the microtunnel and remains buried onshore for ~1 km before emerging above ground just before (~15 m) the onshore endpoint. Approximately 0.5 km of the onshore trunkline occurs within the fenced Major Hazard Facility (MHF) boundary for the Wheatstone LNG Project.

The land within PL 99 occurs within the Ashburton North Strategic Industrial Area (ANSIA), and as such the post-activity land use has been identified as industrial.

As described in Section 3.5, no EOFL decommissioning is planned within the 5-year in-force period of this EP. However, to assist with the long-term planning for decommissioning, CAPL have identified preliminary closure objectives and completion criteria as described in Table 3-8. Given the operational design life for the Wheatstone and Iago field development is expected to be ~30 years, these closure objectives and completion criteria are subject to change prior to decommissioning.

Table 3-8: Preliminary closure objectives and completion criteria for PL 99

Closure objective	Completion criteria	Measurement tools
Land within PL 99 shall be reinstated to facilitate future industrial land use within the Ashburton North Strategic Industrial Area (ANSIA)	Any disturbed surfaces between the end of the microtunnel and the onshore end point within PL 99 to be made stable	Visual inspection (supported by photographs) of reinstated surface
	Land within PL 99 is acceptable for future industrial land use	Endorsement from relevant government agencies

3.6 Field support

3.6.1 Vessel operations

Platform supply vessels will transfer miscellaneous items including chemicals and diesel to the platform via the platform cranes, and will also bunker (via a platform hose to the respective platform storage tanks) water, MEG, TEG, and diesel. A safety standby vessel, capable of launching a fast rescue craft to recover personnel from the sea, may be present to support the platform. For occasional major maintenance campaigns or platform TAR, an accommodation support vessel (ASV) may be required for short periods.

Typically, a survey-type vessel (or similar) will be used for IMR. In exceptional circumstances, depending on the type of IMR activity, additional similar vessels may be used, and/or a larger vessel. IMR vessels may be supported by helicopter operations for crew changes if required (Section 3.6.2).

Vessels will typically use dynamic positioning (DP), however in certain circumstances, anchoring or use of pre-laid moorings may be required. Vessels will not use Heavy Fuel Oil (HFO) but will utilise a lighter marine fuel such as marine diesel oil (MDO) or Marine Gas Oil (MGO). Vessels are expected to return to port to bunker, although may occasionally bunker at sea. Vessels routinely discharge a variety of wastewater streams to the marine environment including sewage, greywater, food waste, cooling water, brine, and oily bilge water; vessels may also incinerate solid wastes.

3.6.2 Helicopter operations

The platform is serviced by helicopters, generally from Barrow Island, which are used for passenger transfers/crew changes and delivering minor supplies. Where required, helicopters may also be used for crew transfers to/from the IMR vessels. When an ASV is on site, the vessel helideck may also be utilised.

3.6.3 ROVs and AUVs

Underwater ROVs or AUVs may be deployed and controlled from the vessels, to support or undertake:

- visual observations or surveys
- positioning of subsea infrastructure
- retrieval and replacement of subsea infrastructure
- removal of sediments on or around subsea infrastructure
- marine growth removal
- IMR activities.

ROVs

ROVs, which are connected to a vessel via umbilical to a tether management system, can be equipped with a range of cameras, specialist equipment and tools. These systems operate as closed systems, such that hydraulic fluids are circulated within to move components. ROVs will typically be stored on the deck of the vessels, but may be temporarily placed on the seabed between activities, resulting in a disturbance to a small area of the seabed.

AUVs

AUVs, which operate independently of surface vessels, are pre-programmed to follow specific mission parameters and navigate using onboard sensors and control systems. These vehicles can be equipped with a variety of cameras, acoustic survey systems, and scientific instruments tailored to survey, mapping, or environmental monitoring tasks. Unlike ROVs, AUVs do not rely on an umbilical or tether, allowing for greater mobility and access to areas that may be challenging for tethered systems. AUVs are typically launched and recovered from the deck of a vessel and transit through the water column while engaged in work.

4 description of the environment

4.1 Environment that may be affected

The environment that may be affected (EMBA) by the petroleum activity within scope of this EP has been defined as the area where a change to environmental receptors may potentially occur as a result of planned activities or unplanned events.

For the purposes of the EP, CAPL have also defined sub-areas of the EMBA that are used to support the subsequent impact and risk assessments (Table 4-1, Figure 4-1). Receptors present within the EMBA (and relevant to the purpose of each of the specific sub-areas) are described in the following sections.

There is no spatial difference between the Hydrocarbon Ecological EMBA and the Hydrocarbon Social EMBA. As such, and unless specified, the term 'EMBA' will be used collectively to refer to both the Hydrocarbon Ecological EMBA and the Hydrocarbon Social EMBA.

CAPL uses stochastic oil spill modelling when developing the EMBA. The modelling is based on 300 simulated runs across three seasons for each spill scenario and often produces layered, elongated, and branching shapes that can be difficult to interpret. To address this, CAPL smooths the shapes into a rounded or straight-edged EMBA, providing a conservative spatial estimate of where oil spill impacts may occur. This method helps account for inherent modelling uncertainty and reduces the risk of misrepresenting outputs.

In addition for this EP, CAPL has taken an especially conservative approach by extending the outer EMBA boundary to align with the OPGGS Act offshore areas. As a result, the EMBA extends beyond the predicted impact zone and does not represent the actual outer limit of spill modelling for this activity.

Table 4-1: Description of EMBA sub-areas

EMBA sub-area	Description and purpose
OA	The OA is defined as the area in which the petroleum activity will be undertaken (Section 3.1.1). The OA is relevant to the impact and risk assessments for all planned activities and unplanned events (except where specified by an aspect-specific EMBA), as the exposure area associated with these impacts and risks is considered to occur within the spatial extent of the OA.
Unplanned Hydrocarbon Release Ecological EMBA (Hydrocarbon Ecological EMBA)	The Hydrocarbon Ecological EMBA is relevant to the risk assessments for ecological receptors from unplanned hydrocarbon release events (Sections 8.1 and 8.2), and determined by the predicted spatial extent of hydrocarbon exposure at the relevant thresholds for surface, entrained, dissolved, and shoreline components (Table 8-4).
Unplanned Hydrocarbon Release Social EMBA (Hydrocarbon Social EMBA)	The Hydrocarbon Social EMBA is relevant to the risk assessments for social, economic, and cultural receptors from unplanned hydrocarbon release events (Sections 8.1 and 8.2), and determined by the predicted spatial extent of hydrocarbon exposure at the relevant thresholds for surface, entrained, dissolved, and shoreline components (Table 8-4). The Hydrocarbon Social EMBA incorporates lower thresholds for surface and shoreline hydrocarbon exposure that are associated with visible oil but are below concentrations at which ecological impacts are expected to occur.

The Planning Area for Scientific Monitoring (PASM) is determined by the predicted spatial extent of hydrocarbon exposure at the exposure (low) thresholds for surface,

entrained, and dissolved components (Table 8-4). The PASM is defined as the area in which this activity may interact with the environment and is shown in **Figure 4-1**.

The *Description of the Environment CAPL Planning Area* is presented in Appendix D of the OSMP (Ref. 101). The Planning Area described is the 'offshore area' in which CAPL's activities may interact with the environment and is applicable to all EPs. If an EMBA or PASM from an individual EP extends into an offshore area that is beyond the existing Planning Area, the Planning Area document will be revised, and the Planning Area extended to incorporate the additional 'offshore area'. The PASM for this activity fits within the PA described in Appendix D of the OSMP (Ref. 101), and no update is required.

Values and sensitivities that are intersected by the EMBA are identified and described in the relevant parts of this section. The values and sensitivities of the PASM are described within Appendix D of the OSMP (Ref. 101), which include any values of sensitivities outside of the EMBA.

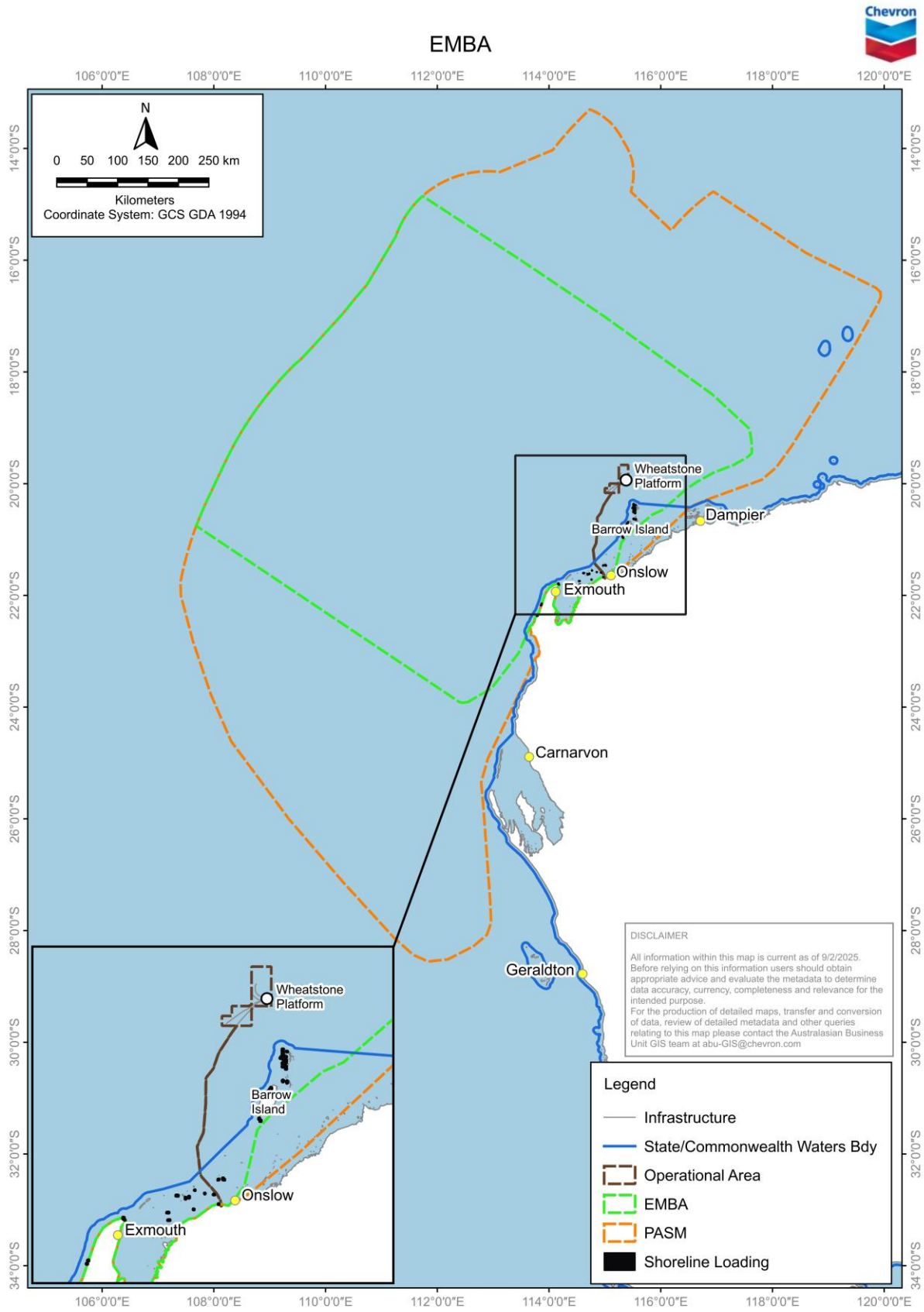


Figure 4-1: OA, EMBA and PASM for Wheatstone operations

4.2 Matters of national environmental significance

Matters of national environmental significance (MNES) are protected under the EPBC Act. The presence of MNES within the EMBA has been determined from the Australian Government's online Protected Matters Search Tool (PMST) (Ref. 166). Table 4-2 summarises the presence of relevant marine and/or coastal MNES within the EMBA; the full PMST reports are included in appendix e.

It should be noted that the EPBC Act PMST is a general database that conservatively identifies areas in which protected species have the potential to occur.

Table 4-2: Presence of MNES

MNES	OA	EMBA
World Heritage properties^	×	✓
National Heritage places^	×	✓
Wetlands of international importance (Ramsar wetlands)^	×	×
Nationally listed threatened species and communities^	✓ species × communities	✓ species × communities
Nationally listed migratory species^	✓	✓
Commonwealth marine area^	✓	✓
Great Barrier Reef Marine Park	×	×
Nuclear actions (including uranium mining)	—	—
Water resources (in relation to coal seam gas or large coal mining development)	—	—

^ These MNES are also identified as relevant values and sensitivities under the OPGGS(E)R. Where ✓ = present, × = not present, and — = not relevant to the petroleum activity.

4.3 Ecosystems and their constituent parts, including people and communities

4.3.1 Benthic communities and habitats

Benthic communities are biological communities that inhabit the seabed and are important for primary or secondary production. Benthic habitats are areas of seabed that do, or can, support these communities. Benthic communities play important roles in maintaining the integrity of marine ecosystems and the supply of ecological services. There is strong evidence that benthic communities are important for maintaining biological diversity because they provide structurally complex and diverse habitat, refuge for vulnerable life stages and a varied and increased food supply (Ref. 224).

The EMBA occurs within the North-west Marine Region (NWMR), which is typically characterised by shallow-water tropical marine ecosystems and high species richness (Ref. 465; Ref. 182). The high species richness is thought to be associated with the diversity of habitats available, such as limestone pavement, coral reefs, and pinnacles (Ref. 465). The broader benthic communities and habitats that may be present within the EMBA are summarised below, with additional data specific to the OA summarised in Section 4.3.1.

The geomorphology of Australia's continental margin is varied. Based on Geoscience Australia's geomorphic classification of seabed within Australia's

exclusive economic zone (EEZ) (Ref. 262), the geomorphic features present within the OA and EMBA are shown in Table 4-3. Deep/hole/valley, shelf, slope and terrace geomorphic features all occur within the OA. One of the pinnacle features identified within the EMBA is Rankin Bank, a known bathymetric feature of regional significance (see Section 4.3.1.2).

Table 4-3: Geomorphic features

Feature	OA	EMBA
Abyssal plain/deep ocean floor		✓
Canyon		✓
Continental rise		✓
Deep/hole/valley	✓	✓
Knoll/abyssal hills/hills/mountains/peak		✓
Pinnacle		✓
Plateau		✓
Reef		✓
Ridge		✓
Shelf	✓	✓
Slope	✓	✓
Terrace	✓	✓
Tidal sandwave/sand bank		✓
Trench/trough		✓

The composition, distribution, and movement of marine sediments is an important component of a marine ecosystem. These sediments can influence the primary biological production in the water column as well as the evolution and distribution of benthic habitats. The north-west WA comprises bioclastic, calcareous, and organogenic sediments deposited from relatively slow and uniform sedimentation rates (Ref. 31). Sediments in the NWMR generally become finer with increasing water depth, ranging from sand and gravels on the continental shelf to mud on the continental slope and abyssal plain (Ref. 42).

Based on the Commonwealth Scientific and Industrial Research Organisation's (CSIRO) Marine Benthic Substrate Database (Ref. 131), the seafloor sediment type within the portion of the OA that falls within the marine environment is "calcareous gravel, sand and silt" before becoming land mass as it reaches the shoreline. The seafloor sediment type of the wider EMBA is predominantly "calcareous ooze" with more coastal areas made up of "calcareous gravel, sand and silt" intersected with areas of "mud and calcareous clay". Further offshore within the EMBA there are areas of "biosiliceous marl and calcareous clay".

The Integrated Marine and Coastal Regionalisation of Australia (IMCRA) is a biogeographic regionalisation of oceanic waters within Australia's EEZ (Ref. 176). The OA occurs within the Northwest Province and Northwest Shelf Province provincial bioregions. In addition to these two provincial bioregions, the EMBA also intersects with the Northwest Transition, Central Western Transition and Central Western Shelf Transition provincial bioregions. The geomorphology characteristics and biological communities for each of these bioregions, as described in *The North-west Marine Bioregional Plan: Bioregional Profile* (Ref. 182), are summarised in Table 4-4

Listed threatened ecological communities (TECs) are a MNES under the EPBC Act, and a relevant value and sensitivity under the OPGGS(E)R. There are no known TECs within the EMBA.

Table 4-4: Features of provincial bioregions

IMCRA Provincial Bioregion^	OA	EMBA
Northwest Shelf Province	✓	✓
Characteristics of the geomorphology and biological communities of the Northwest Shelf Province include: • bioregion occurs almost entirely on the continental shelf, except for a small area north of Cape Leveque that extends onto the continental slope • this bioregion includes more than 60% of the continental shelf in the NWMR • continental shelf gradually slopes from the coast to the shelf break, but displays a number of seafloor features such as banks/shoals and holes/valleys, including: • Glomar Shoal which occurs in ~26–70 m water depth and is distinguished by highly fractured molluscan debris, coralline rubble and coarse carbonate sand • Leveque Rise (large plateau), which is one of only two shelf plateaux within the NWMR • significant areas of tidal sandwaves or sandbanks (ranging in height ~5–10 m) occur on the inner-most reaches of Exmouth Gulf, and are one of only three major occurrences of this type of feature in the NWMR • shelf also contains several terraces and steps that extend into adjacent bioregions and reflect ancient coastlines from when the sea level in the NWMR was lower; the most prominent of these occurs at a water depth of ~125 m • sediment differentiation occurs on a north-south gradient: • south of Broome, sediment is relatively homogenous and dominated by sands with small proportion of gravel • north of Broome, sediment is highly variable with sand or gravel dominance in no discernible spatial pattern • mud increases slightly within ~100 km of the coast, and within ~100 km of the shelf break, but is mostly absent from areas in between • sandy substrates on the shelf within this bioregion are thought to support low density benthic communities of bryozoans, molluscs, and echinoids • sponge communities are also sparsely distributed on the shelf, but are found only in areas of hard substrate Features and areas of ecological importance within the Northwest Shelf Province have been identified as: • Browse Island and surrounding waters • Lacepede Islands and surrounding waters • Quondong Point, north of Broome and surrounding waters • West coast of the Dampier Peninsula, including Beagle and Pender bays and surrounding waters • Pilbara coast (between Exmouth and Broome) and surrounding waters • Exmouth Gulf—Muiron Islands and surrounding waters • Ancient coastline at 125 m depth contour • Glomar Shoal. Of these features and areas within the Northwest Shelf Province, the Ancient coastline at 125 m depth contour occurs within the OA and EMBA. Refer to Section 4.3.7.1 for further descriptions of this feature.		
Northwest Province	✓	✓
Characteristics of the geomorphology and biological communities of the Northwest Province include: • bioregion occurs entirely on the continental slope and is comprised of muddy sediments		

IMCRA Provincial Bioregion^	OA	EMBA
• distinguished by a number of topographic features, such as the Exmouth Plateau, terraces and canyons (including the Swan and Cape Range canyons), as well as deep holes and valleys on the inner slope (including the Montebello Trough) • the benthic shelf and slope communities of this bioregion comprise both tropical and temperate species with a north-south gradient • the continental slope between North West Cape and the Montebello Trough has been identified as one of the most diverse slope habitats of Australia • the Exmouth Plateau is also likely to be an important area for biodiversity as it provides an extended area offshore for communities adapted to depths of ~1,000 m • information available on sediments in the bioregion indicates: • benthic communities are likely to include filter feeders and other epifauna • soft-bottom environments are likely to support patchy distributions of mobile epibenthos, such as sea cucumbers, ophiuroids, echinoderms, polychaetes and sea pens • biological communities within canyons in the bioregion are poorly understood. Features and areas of ecological importance within the Northwest Province have been identified as: • Exmouth Plateau • canyons on the slope, including the Cape Range Canyon • demersal fish communities associated with the slope. Of these features and areas within the Northwest Province, the demersal fish communities associated with the slope occurs within the OA and EMBA. The Exmouth Plateau and canyons on the slope also occur within the EMBA. Refer to Section 4.3.7.1 for further descriptions of these features.		
Northwest Transition		✓
Characteristics of the geomorphology and biological communities of the Northwest Transition include: • around half (52%) of the bioregion occurs on the continental slope, with smaller areas in the north-west of the bioregion located on the Argo Abyssal Plain and continental rise • encompasses a range of water depths, from the shelf break (~200 m water depth) to ~5,980 m over the Argo Abyssal Plain • other topographic features within the bioregion include areas of rise, ridges, canyons and apron/fans • sediments of the slope are dominated by sands, whereas the sediments of the abyssal plain/deep ocean floor are dominated by muds • the bioregion also has reefs such as Mermaid, Clerke, and Imperieuse reefs, which are collectively known as the Rowley Shoals • the benthos of the deep ocean areas are likely to support meiofauna (e.g. nematodes), larger infauna (e.g. polychaete worms, isopods), and sparsely distributed epibenthic communities (e.g. sea pens) • mobile benthic species (e.g. deepwater sea cucumbers, crabs, polychaetes) are likely to be associated with the seafloor, and bioregion may support sparse populations of bentho-pelagic fish and cephalopods in low densities. Features and areas of ecological importance within the Northwest Transition have been identified as: • Rowley Shoals—Mermaid Reef Marine National Nature Reserve, Clerke and Imperieuse reefs and surrounding waters • Fish communities associated with the slope. Of these features and areas within the Northwest Transition, the demersal fish communities associated with the slope occurs within the OA and EMBA. Refer to Section 4.3.7.1 for further descriptions of this feature.		
Central Western Shelf Transition		✓
Characteristics of the geomorphology and biological communities of the Central Western Shelf Transition include:		

IMCRA Provincial Bioregion^	OA	EMBA
• bioregion is located entirely on the continental shelf and is comprised mainly of sandy sediments • this bioregion includes both State and Commonwealth waters between water depths of 0 m to ~80 m • Commonwealth waters in this bioregion represent <1% of the total area of the NWMR. • the benthic ecological communities of the bioregion, include both tropical and temperate species transitioning along a north-south gradient • Ningaloo Reef is the most significant geomorphic feature of this bioregion: • it extends along the Cape Range Peninsula for over 260 km, and is the only example in the world of an extensive fringing coral reef on the west coast of a continent • it is marked by a well-developed spur and groove system of fingers of coral formations penetrating into the ocean with coral sand channels in between • a lagoon on the inshore side separates Ningaloo reef from the mainland • the biological communities of the Ningaloo Reef differ from the hard coral reefs located elsewhere in the NWMR • a large proportion of this bioregion is covered by the State and Commonwealth Ningaloo Marine Parks, which are one of the most significant hotspots of biodiversity within the NWMR • the Ningaloo Marine Parks incorporate a diversity of habitats including the seabed of the continental slope and shelf that supports demersal and benthic plants and animals including fish, molluscs, algae, sponges, soft corals and burrowing bivalves; as well as coral reefs and intertidal areas such as rocky shores and mangroves in State waters. Of these features and areas within the Central Western Shelf Transition, the demersal fish communities associated with the slope and Commonwealth waters adjacent to Ningaloo Reef occurs within the EMBA. Refer to Section 4.3.7.1 for further descriptions of these feature.		
Central Western Transition		✓
Characteristics of the geomorphology and biological communities of the Central Western Transition include: • the bioregion is characterised by large areas of continental slope, with sediments dominated by muds and sands that decrease in grain size with increasing depth • about 40% of the bioregion occurs in water depths greater than 4,000 m and the deepest areas of the bioregion occur within the Cuvier Abyssal Plain at ~5,330 m • the continental slope is incised by numerous topographic features such as terraces (e.g. Carnarvon Terrace), canyons (e.g. Cloates and Carnarvon canyons) and rises • a large part of the bioregion comprises the Cuvier Abyssal Plain • Wallaby Saddle is another important topographic feature within this bioregion and is the most extensive area of this type of topographic feature in the NWMR. This feature does not intersect the EMBA. • the benthic slope communities of this bioregion comprise both tropical and temperate species along a north-south gradient • the biological communities of the Central Western Transition are thought to be distinctive owing to the proximity of deep ocean areas to the continental slope and shelf, resulting in close interaction between pelagic species of the Cuvier Abyssal Plain and those of the slope and shelf • the harder substrate of the slope in waters of 200–2,000 m deep is likely to support populations of epibenthos such as bryozoans, sponges and encrusting coralline algae; these support larger infauna and benthic animals such as crabs, cephalopods, echinoderms and other suspension-feeding epibenthic organisms • in the deeper waters of the abyss, the benthic communities are likely to be sparse and include meiofauna (e.g. nematodes). Features and areas of ecological importance within the Central Western Transition have been identified as: • Wallaby saddle (does not intersect the EMBA) • Cape Range Canyon and Cloates Canyon		

IMCRA Provincial Bioregion^	OA	EMBA
Of these features and areas within the Central Western Transition, the Cape Range Canyon and Cloates Canyon occur within the EMBA. Refer to Section 4.3.7.1 for further descriptions of these features.		

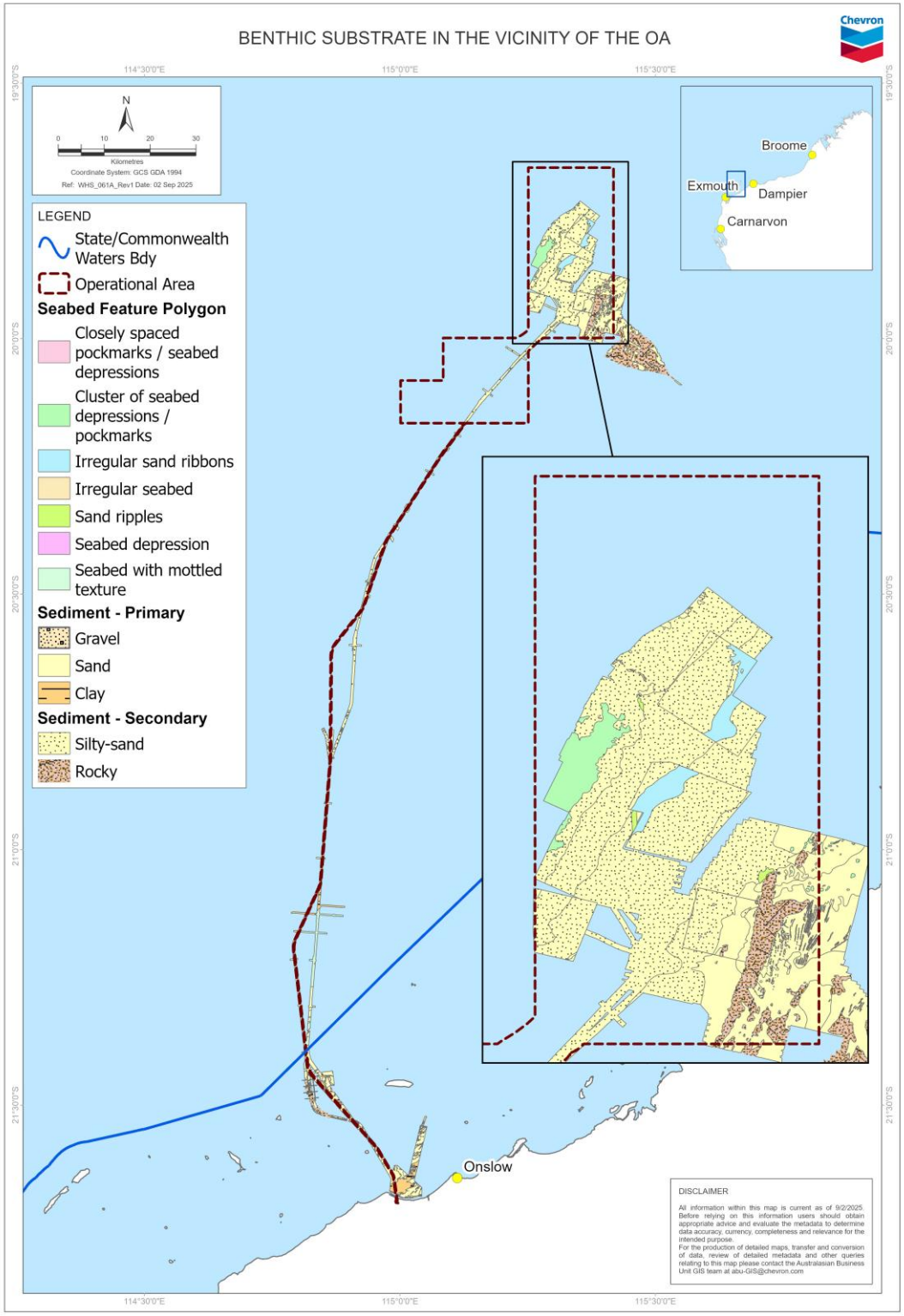


Figure 4-2: Benthic substratewithin or proximal to the OA

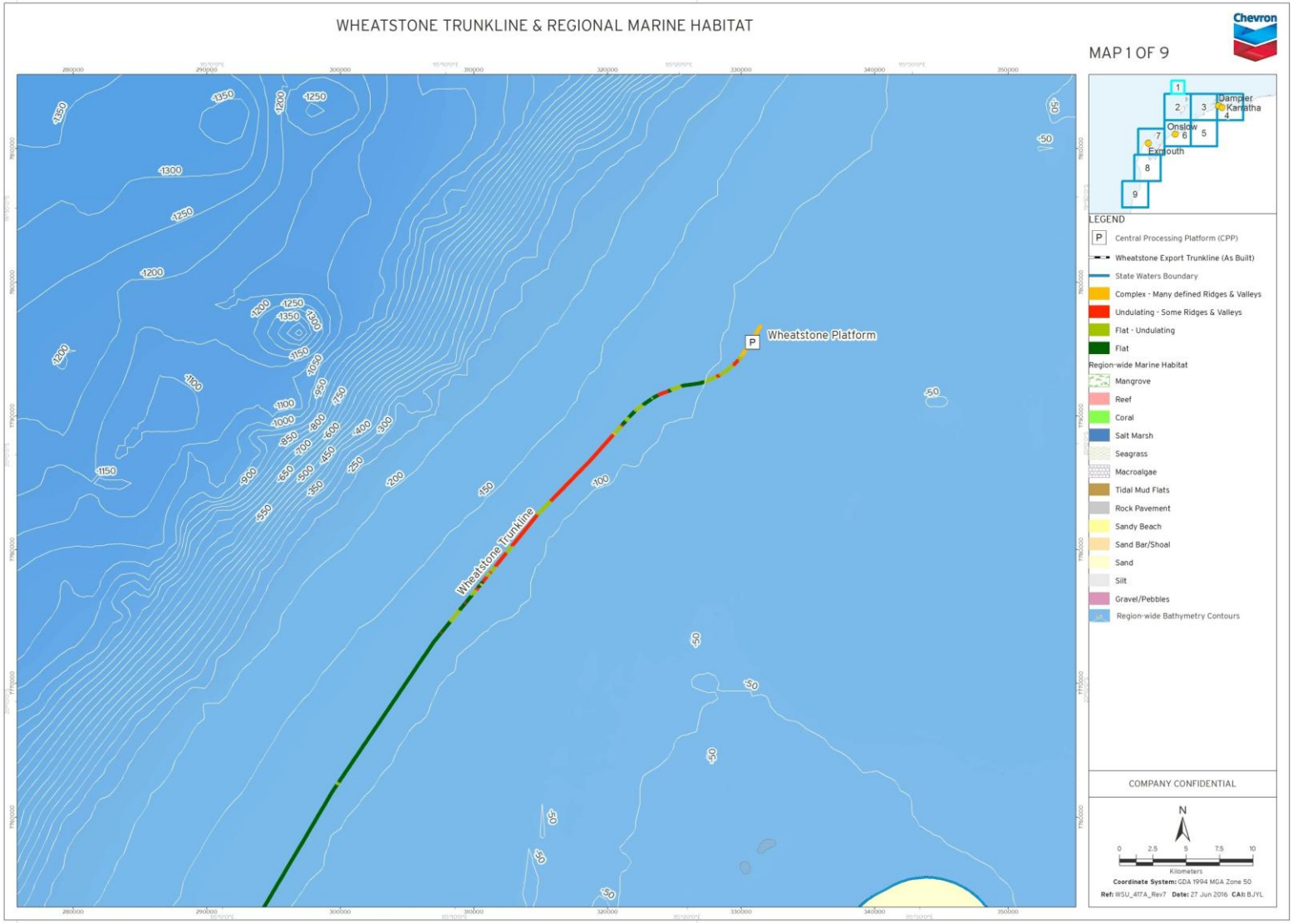


Figure 4-3: Wheatstone trunkline and regional marine habitat (map 1 of 9)

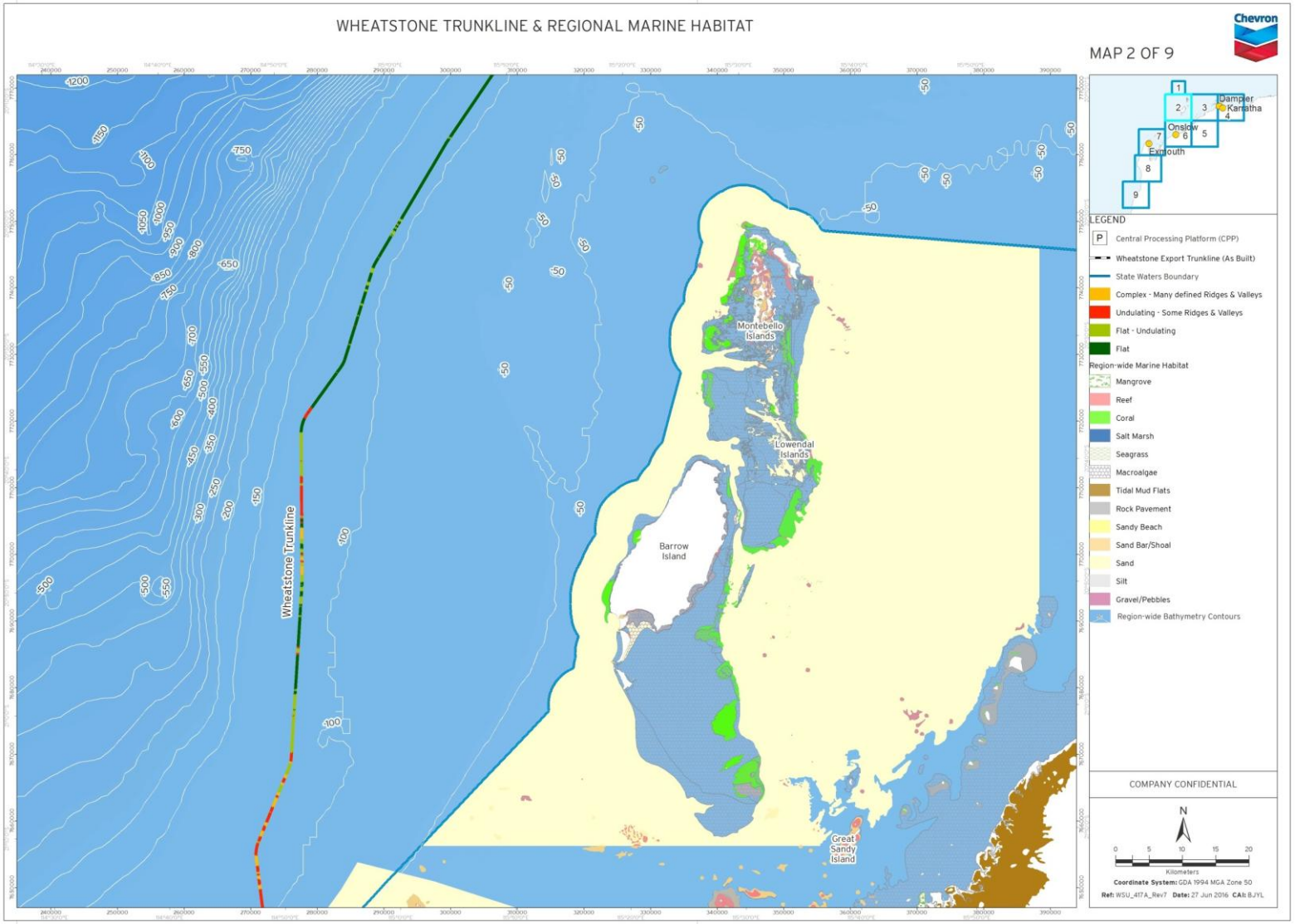


Figure 4-4: Wheatstone trunkline and regional marine habitat (map 2 of 9)

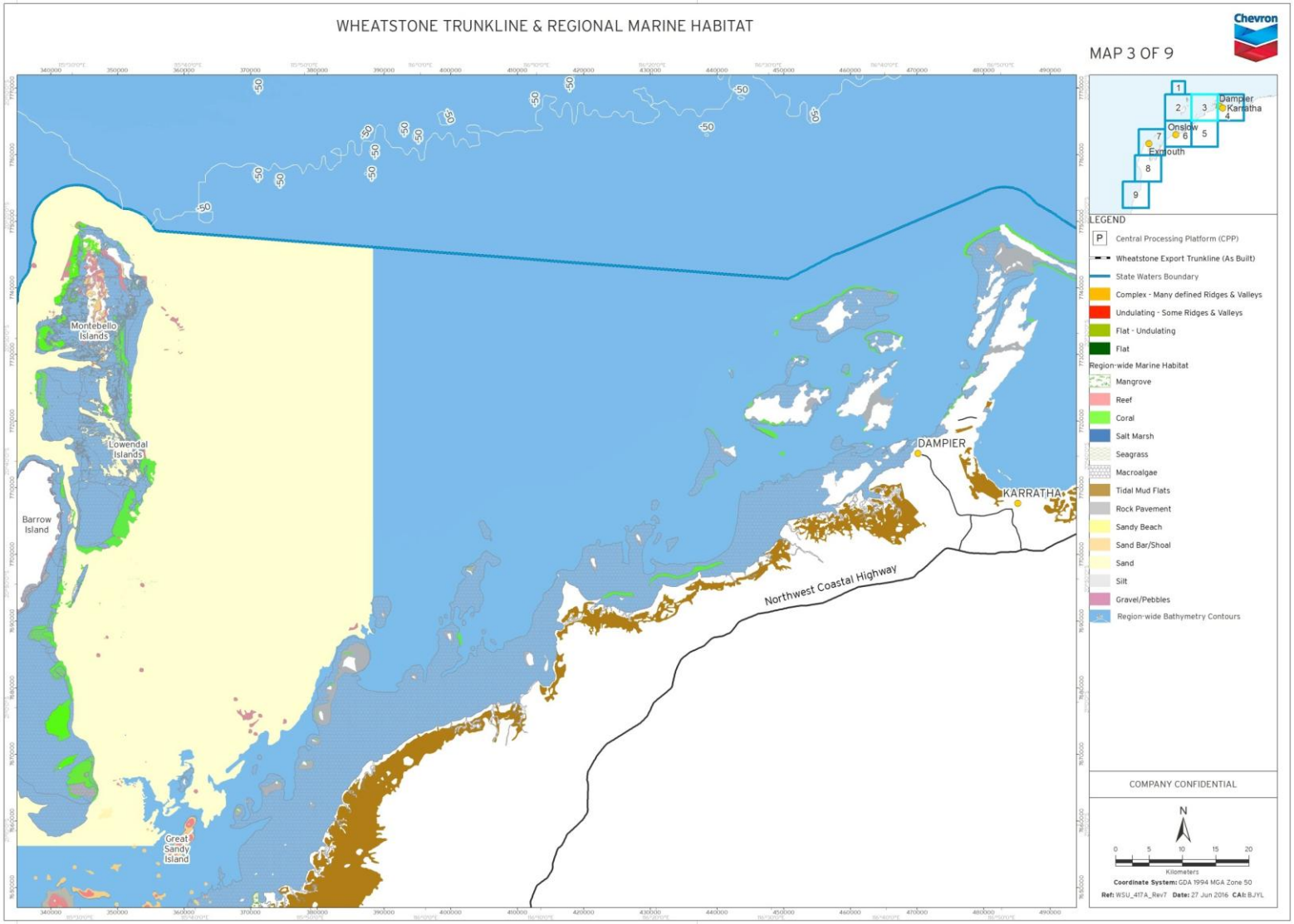


Figure 4-5: Wheatstone trunkline and regional marine habitat (map 3 of 9)

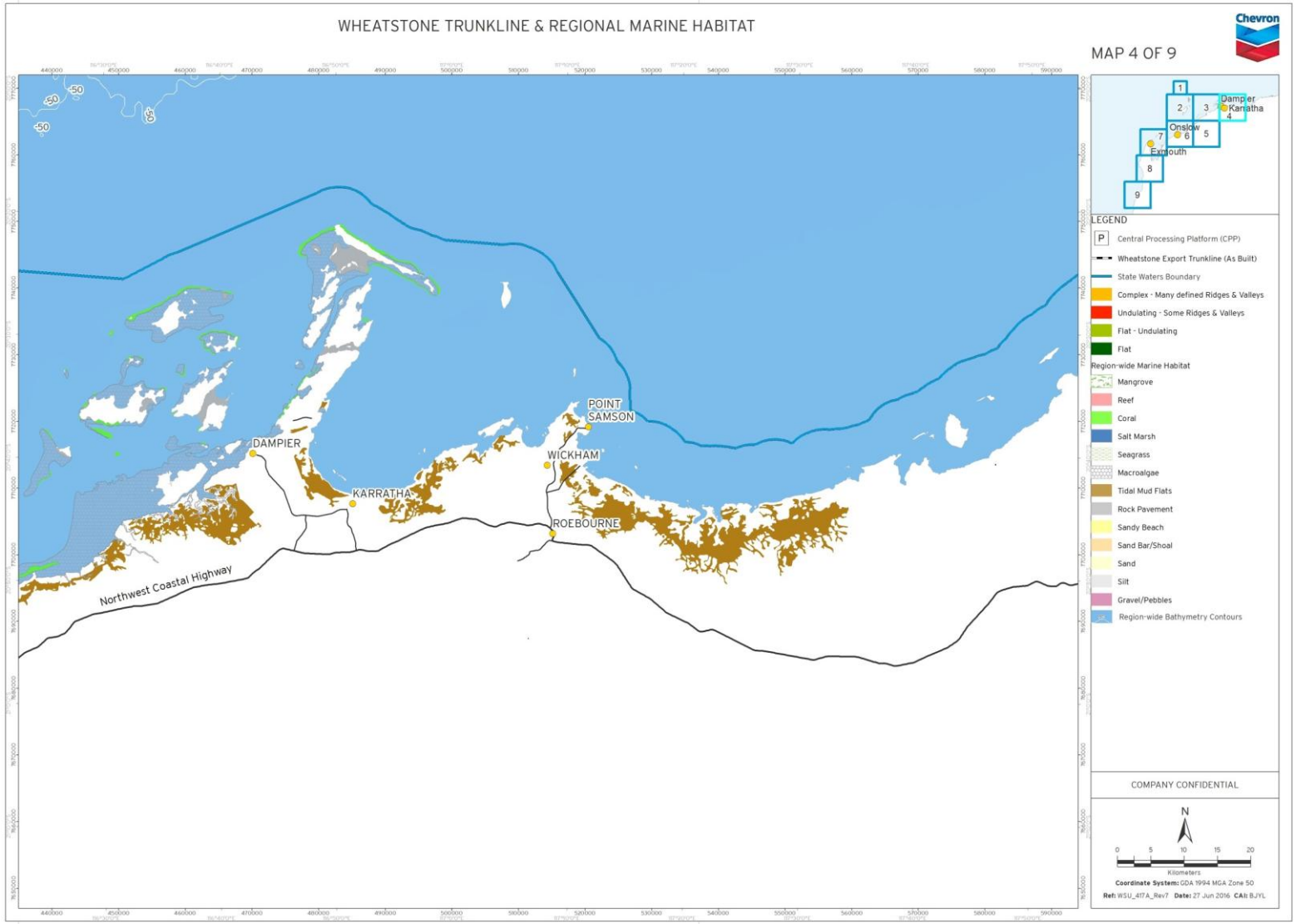


Figure 4-6: Wheatstone trunkline and regional marine habitat (map 4 of 9)

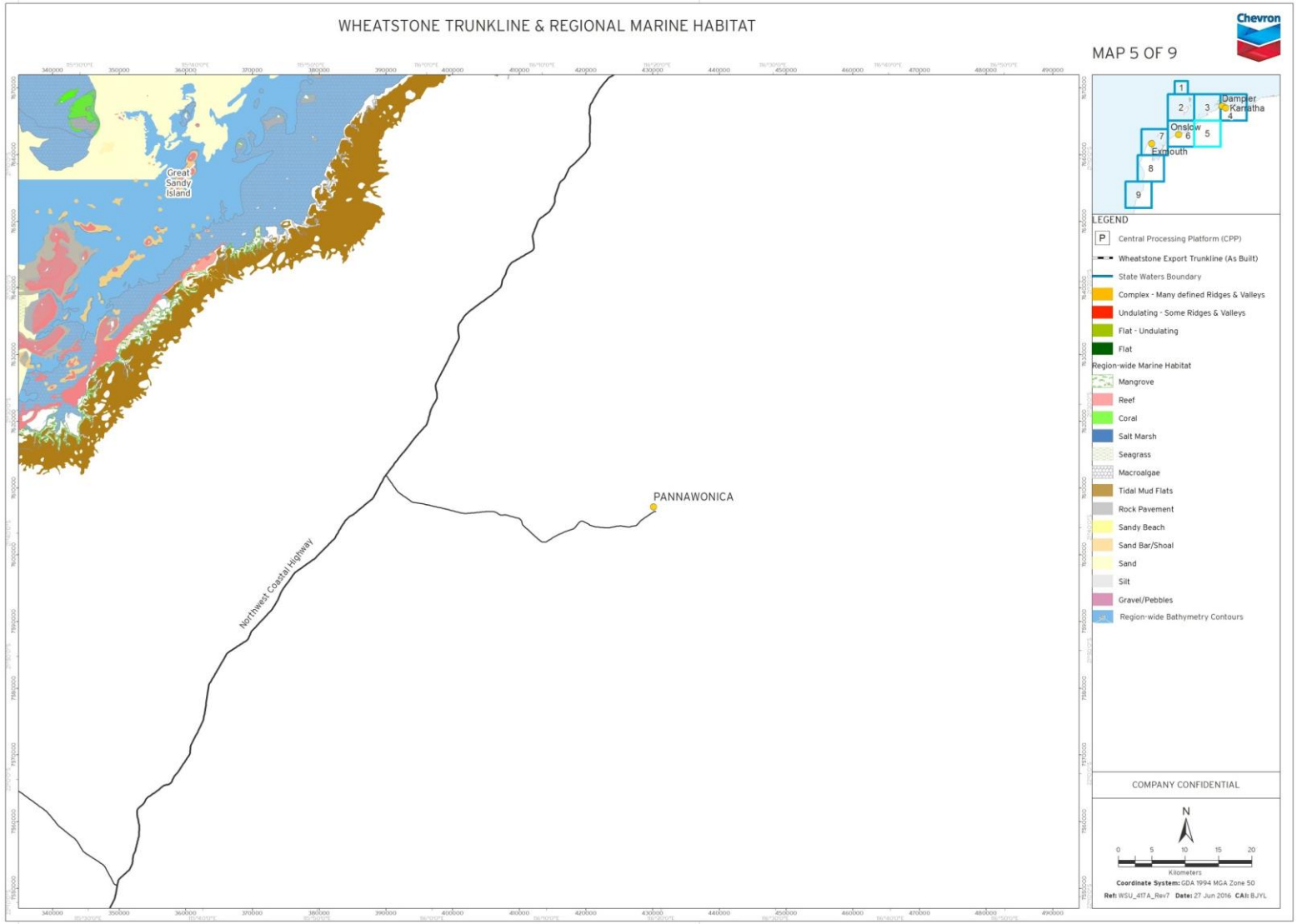


Figure 4-7: Wheatstone trunkline and regional marine habitat (map 5 of 9)

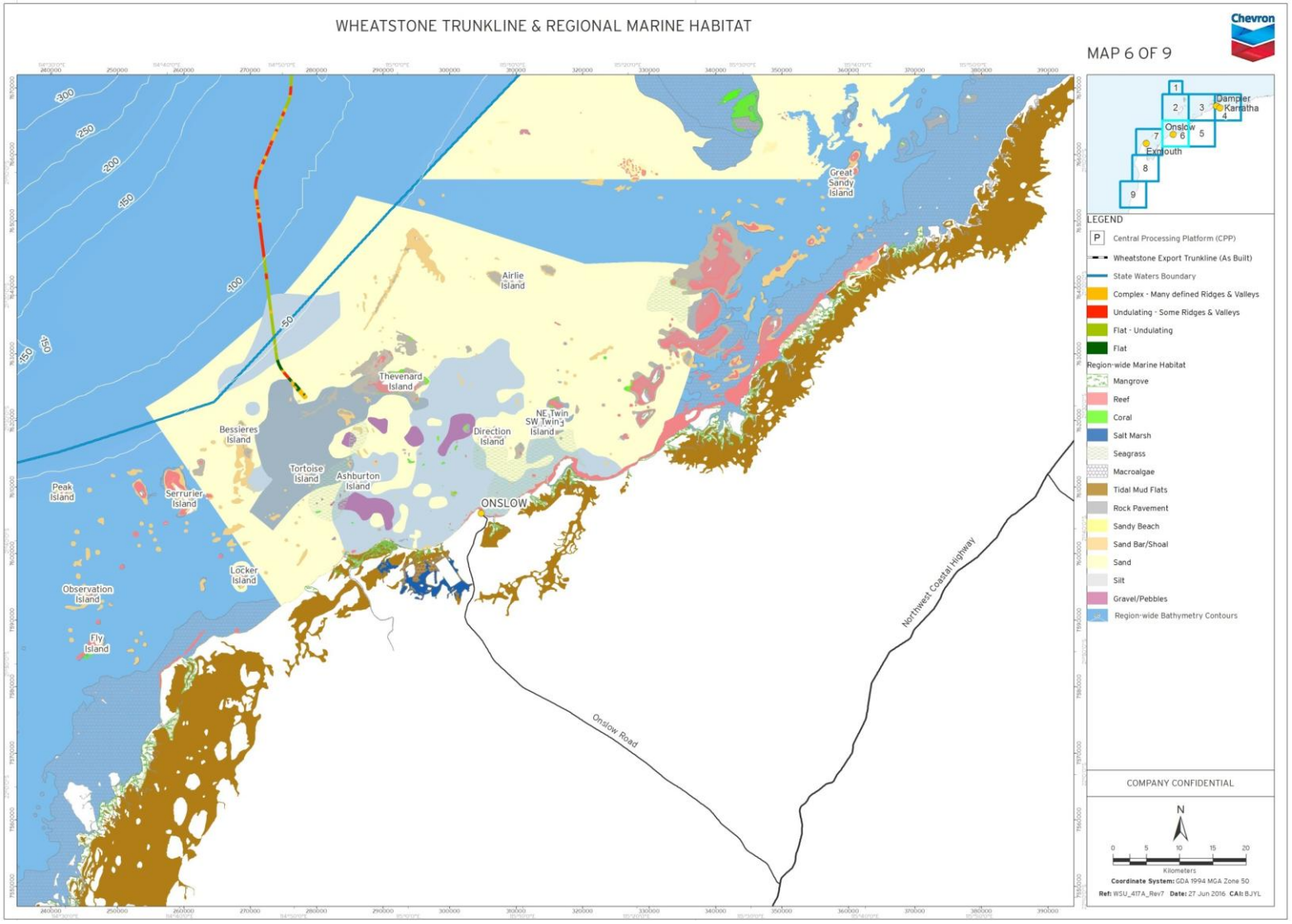


Figure 4-8: Wheatstone trunkline and regional marine habitat (map 6 of 9)

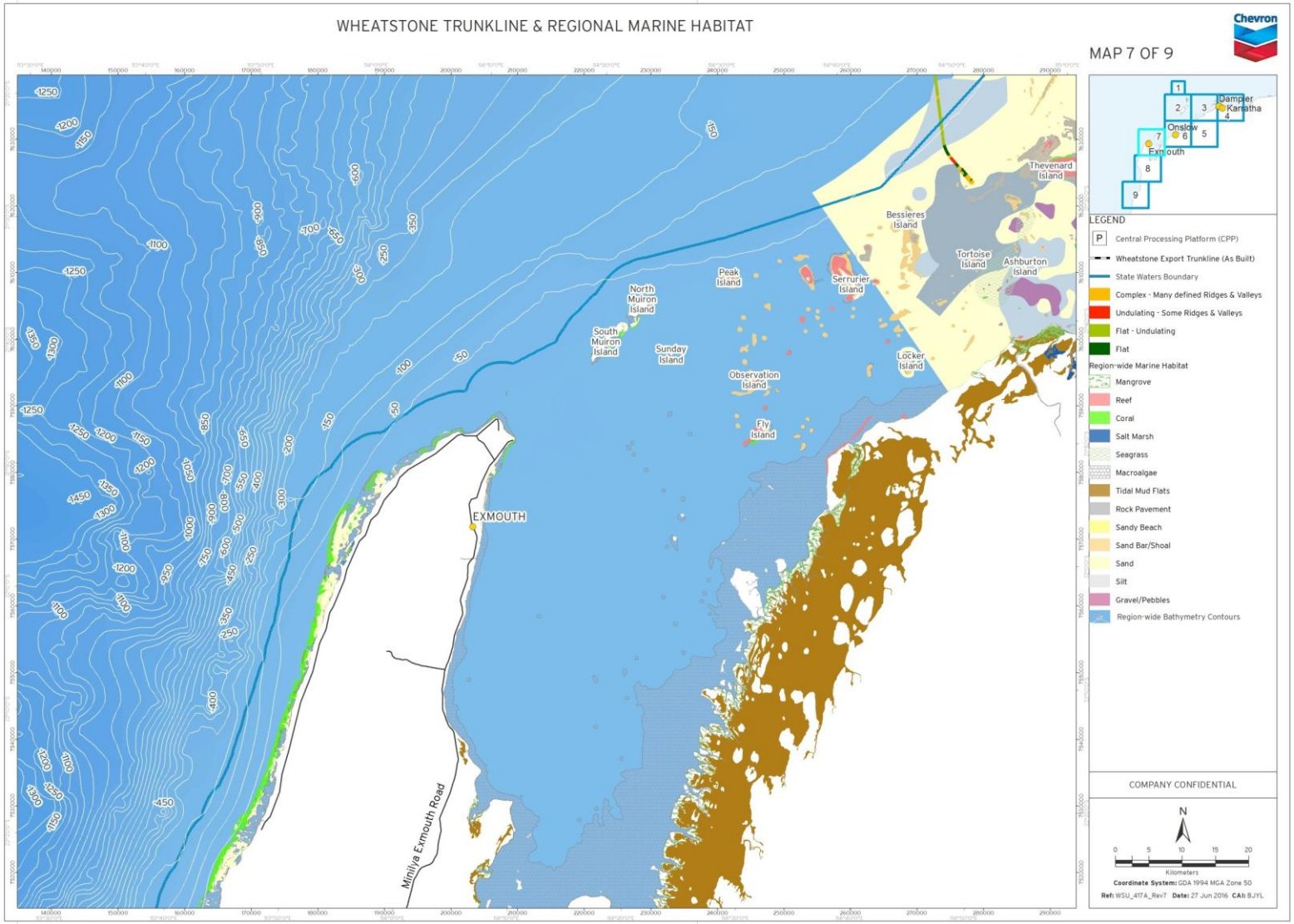


Figure 4-9: Wheatstone trunkline and regional marine habitat (map 7 of 9)

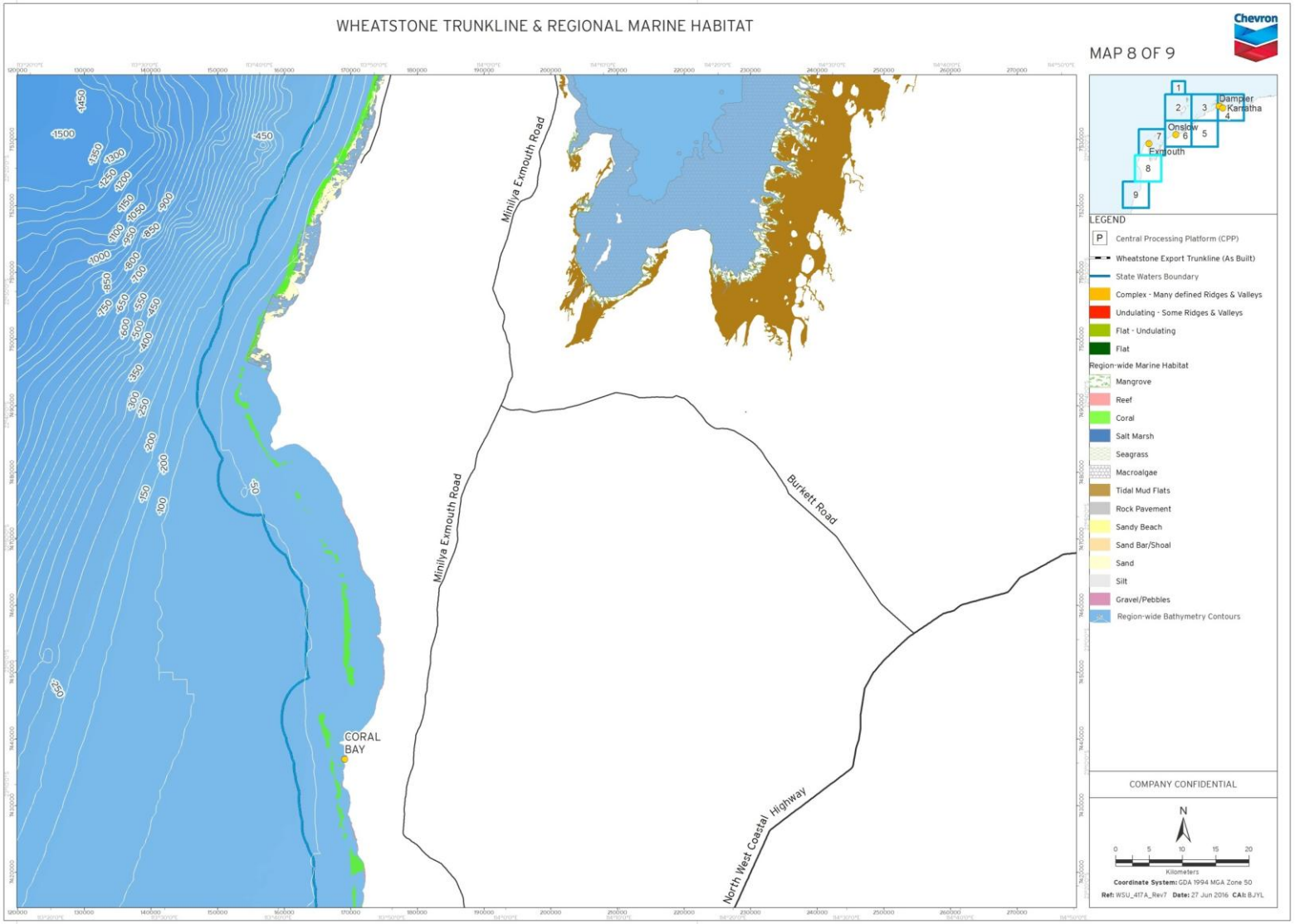


Figure 4-10: Wheatstone trunkline and regional marine habitat (map 8 of 9)

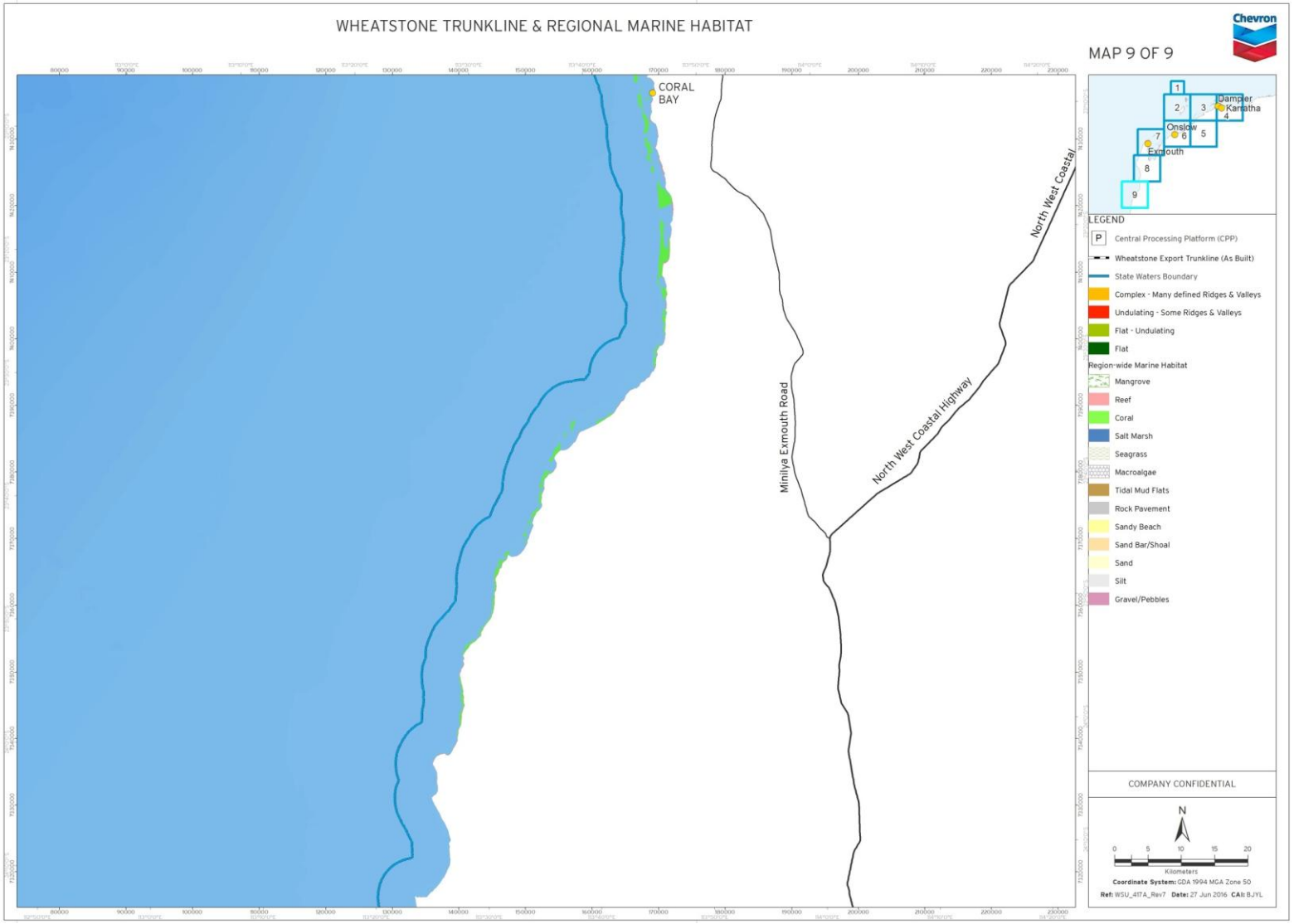


Figure 4-11: Wheatstone trunkline and regional marine habitat (map 9 of 9)

4.3.1.1 Operational Area (OA)

The OA has been separated into three components to better define the benthic characteristics of the trunkline, platform and fields. These are described in the Sections 4.3.1.1.1, 1.1.1.1.1 and 4.3.1.1.3 respectively. Benthic substrate across the OA as a whole has been defined in Figure 4-2. A further nine maps show the regional marine habitat in the vicinity of the OA and in the surrounding EMBA (Figure 4-3–Figure 4-11).

4.3.1.1.1 Trunkline

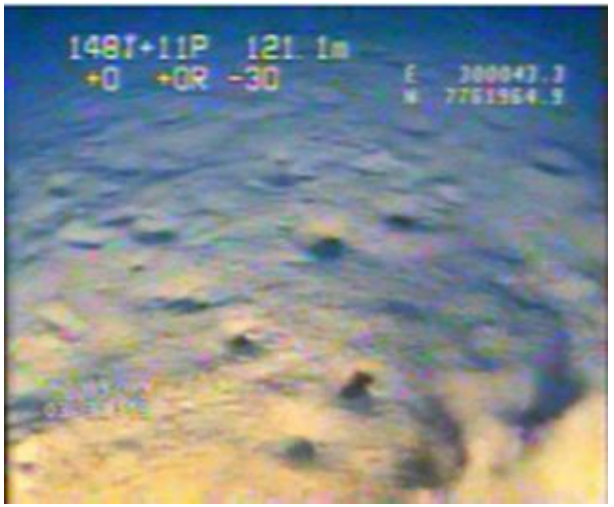
Several data sources were used to define benthic habitat types along the trunkline, including targeted ROV benthic surveys, and geotechnical surveys associated with infrastructure installation for the Wheatstone Project. From the data collected, four benthic habitats were defined in terms of the sea floor substrate (soft versus hard substrate) and topographical complexity, and were used to classify habitat type adjacent to the trunkline. These habitat types were: complex (ridges and valleys), undulating (some ridges), flat (undulating) and flat. The former two are dominated by hard substrate and the latter two by unconsolidated sediment. The description of the trunkline habitat (below) starts at the Wheatstone Platform and continues landward. Table 4-5 describes these habitats and their ecological values; their placement along the Trunkline is shown in Figure 4-12.

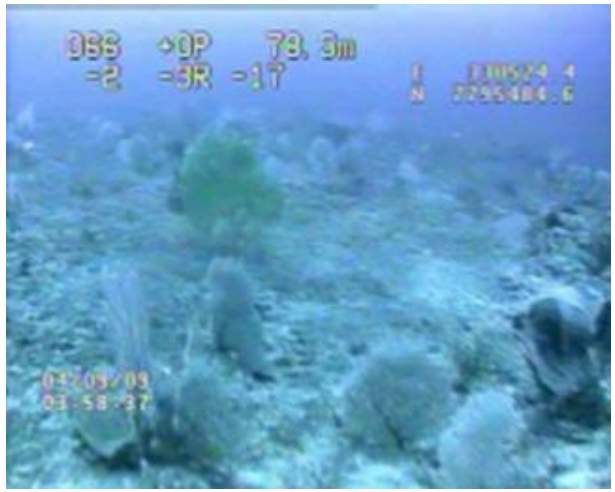
Habitats along the trunkline at depths >100 m were characterised primarily by undulating, flat (undulating), or flat substrates (Figure 4-3, Figure 4-4), with only small localised areas of complex habitat (Ref. 57).

In waters depths between 15 m and 100 m (Figure 4-8), the dominant habitat (>75% of the substratum) observed along the trunkline was sand (Ref. 57). Other habitats included low-profile reef and sand-inundated reefs. Biotic communities associated with the sand habitat in depths between 15 m and 100 m were dominated by mats of red algae, while invertebrates (e.g. sponges, macroalgae) were evident on more complex habitat types (Ref. 57).

The sub-tidal habitats <15 m (adjacent to the mainland, largely in State waters) were described extensively in the Wheatstone Draft EIS/ERMP (Ref. 57). The trunkline in these shallow water environments intercepted inter-reefal habitats characterised by sponges, macroalgae, seagrasses, and sand largely devoid of invertebrates and flora. These form mosaics of habitat patches of varying spatial scales. The broad-scale distribution of seagrasses is shown in Figure 4-8 and the other habitats are shown on maps in Chapter 6 of the Draft EIS/ERMP (Ref. 57). Abundance estimates of these organisms not only vary spatially, but for macroalgae and seagrasses cover estimates vary seasonally. The closest coral reef structure to the trunkline is Ashburton Island, about one kilometre west of the trunkline (Figure 4-8). Cover of scleractinian corals on this and other reefs adjacent to the trunkline was typically <10% at the time of the surveys. Turf algae was the dominant sessile benthic organism on these reefs.

Table 4-5: Trunkline habitat characterisation

Habitat	Description	% of Trunkline and position	Representative Imagery
Flat	Habitats characterised by unconsolidated soft sediment, and little to no hard substrate. Flat habitats support no pronounced benthic assemblages, but may support some burrowing organisms.	43%. Largely in deeper habitats >100 m depth, and away from topographic features of ridgelines.	
Flat – Undulating	Habitats largely characterised by unconsolidated soft sediment, with small patches of topographic complexity representing rock or hard structure in undulating areas, which has a low potential to support invertebrate assemblages. Flat-undulating habitats may support 1 to 2% of benthic invertebrates, such as sponges, but has no pronounced benthic assemblages; may support some burrowing organisms.	28%. Largely in deeper habitats >100 m depth, and away from topographic features of ridgelines.	

Habitat	Description	% of Trunkline and position	Representative Imagery
Undulating – Some Ridges and Valleys	Habitats largely characterised by hard substrate patches broken by areas of soft unconsolidated sediment that appear to have accumulated between undulations. Undulating habitat may support 2 to 10% of benthic invertebrates, such as sponges and the presence of gorgonians; may support some burrowing organisms in areas of soft substrate.	22%. Largely adjacent to state water (>70 m depth), and adjacent to the Wheatstone Platform, on the ridgeline.	
Complex – Many Defined Ridges and Valleys	Habitats largely characterised by hard substrate forming calcarenite reef. Undulating habitat may support 2 to 10% or more of benthic invertebrates, such as sponges and gorgonians in more pronounced benthic communities; unlikely to support some burrowing organisms due to the absence of soft substrate.	7%. Largely adjacent to state water (>70 m depth), and adjacent to the Wheatstone Platform, on the ridgeline.	

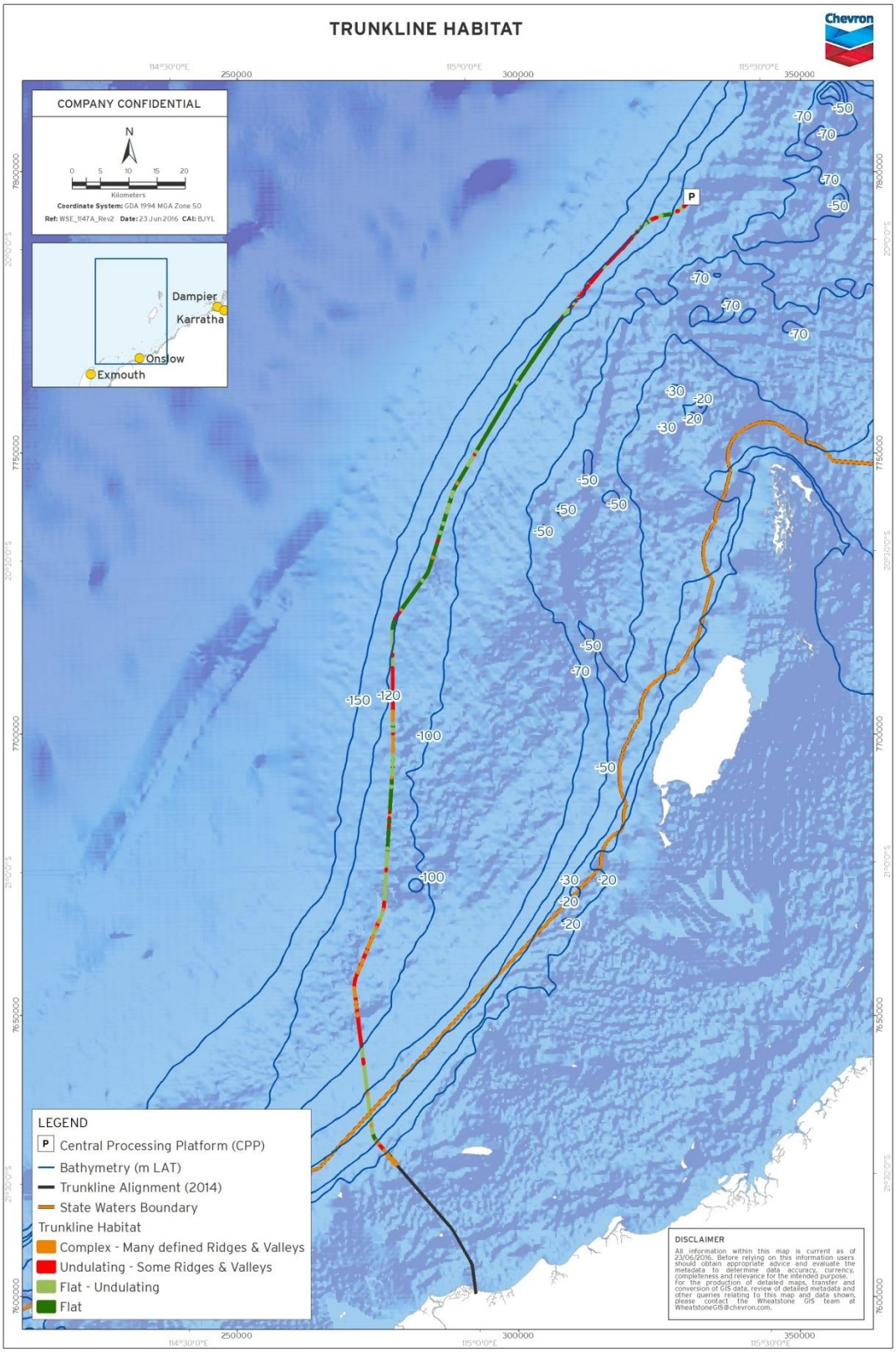


Figure 4-12: Wheatstone trunkline habitat

4.3.1.1.2 Platform

The platform is on a ridgeline (~11 km long), in an area of hard substratum (Figure 4-13, Figure 4-14). The closest drill centre is ~4 km from the ridgeline. Much of the seafloor at the platform and its immediate vicinity comprises hard rock with a thin veneer of sand. This has been identified using a combination of cone penetration tests, multibeam echo sounder and video images taken before the installation of the rock blanket (Ref. 202).

The platform ridgeline is not an isolated area of hard substratum, as there are additional areas of hard substratum to the northeast and southeast, outside the OA. The platform hard substratum may support higher amounts of benthic fauna (such as sponges and soft corals), relative to soft substratum (Ref. 216) (Figure 4-17). Based on studies undertaken for the Project, the categories of marine habitats and associated benthic fauna identified around the platform are described in more detail below.

Benthic or seafloor habitats were characterised by 2–10% cover of sessile benthic invertebrates (Ref. 465). The dominant sessile benthic invertebrates on the ridgeline were soft corals, sea fans, and sponges (Ref. 465) (Figure 4-17). Soft corals and sea fans belong to the order Alcyonacea, and are hereafter collectively referred to as ‘gorgonians’. The term ‘sea fan’ is reserved exclusively for gorgonians with a fan-shaped morphology, which appear to be the dominant growth-form on the ridgeline (Ref. 465) (Figure 4-17). The apparent absence or rarity of zooxanthellae hard corals and gorgonians at the ridgeline probably relate to low benthic light levels at depths >70 m.

A baseline benthic habitat survey was undertaken in December 2016 (Ref. 83). The survey found the dominant benthic organisms on the ridgeline belonged to the phylum Cnidaria, and included gorgonians, antipatharians (or black coral) and hydrozoans. Overall, the cover (percentage cover) and density (counts/unit area) of benthic organisms were low and spatially variable in the study area. Densities were positively correlated with increasing levels of hard substrate and negatively correlated with increasing water depth.

Findings reported in 2010 (Ref. 465) and 2016 (Ref. 83) are similar to those of other surveys conducted on the North West Shelf (NWS), which found hard substratum to be characterised by epifauna assemblages dominated by gorgonians and sponges (Ref. 487).

Gorgonians belong to the taxonomic class Anthozoa. Unlike hard corals, most gorgonians lack a ridged skeleton and the fan-shaped gorgonians from the Indo-Pacific do not possess the symbiotic dinoflagellates called zooxanthellae (Ref. 487). The taxonomy of gorgonians and sponges on the north-west shelf is incomplete (Ref. 487). Azooxanthellate gorgonians are suspension feeders that rely on currents to transport food, such as small plankton, to their polyps (Ref. 487).

Sponges also rely on currents to transport food, such as plankton and bacteria (Ref. 273). This may explain the dominance of gorgonians and sponges on the ridgeline. Most gorgonians and sponges need to attach to hard substratum, but some species of sponges can burrow into sediment (Ref. 273). This may also explain why cover and densities of these animals are less on the soft substratum compared with the ridgeline.

The ridgeline will support fish communities that may differ to that found on the adjacent soft substratum, but are likely to be similar to other hard substratum on the NWS. According to Last et al (Ref. 314) there are 1,090 species of fishes in Australia’s shelf demersal habitat defined as depths between 40 and 200 m. The

exact number found in these depths on the NWS is unclear. Sainsbury et al. (Ref. 417) listed 732 species from shelf waters (30–150 m) between Exmouth and the Gulf of Carpentaria. Allen and Swainston (Ref. 13) listed 1062 species for shelf waters (mainland to outer NWS) of northern WA. Only a small sub-set of these species would be demersal that would largely be restricted to hard substratum. Such species would include groupers (*Epinephelus*) and some species of snapper belonging to the genus *Lutjanus* (Ref. 409).

Seagrasses and macroalgae, which are characteristic of sand habitats and reefs, are unlikely to occur within the Commonwealth waters of the OA (Ref. 307). This is most likely due to low benthic light levels characteristic of deep waters.

Based on available information, the level of diversity does not appear to be greater in the platform area than the remaining area of the ridgeline (Ref. 465). There are no identified ecologically isolated or regionally significant marine habitats found around the platform or in the OA (Ref. 465; Ref. 463). Fromont *et al*. (Ref. 242) suggest that similar hard substratum habitats of the region, and adjacent regions, occur along the outer shelf and may include some unique species; however, Project surveys indicate these habitats are well represented regionally (Ref. 465; Ref. 463; Ref. 464; Ref. 343).

This finding was consistent with studies of the shallow Australian sponge fauna, indicating that the environmental factors that influence their distribution are generally related to factors of depth, substratum, and currents (Ref. 242). Regionally, hard substratum occur episodically as an escarpment through the Northwest Shelf Province and Northwest Shelf Transition formations (Ref. 242; Ref. 216) at the 125 m depth mark.

4.3.1.1.3 Fields

CAPL has conducted extensive surveys within production licences WA-46-L, WA-47-L and WA-48-L to understand the nature and composition of habitat and seabed sediments. These surveys comprise high-resolution geophysical surveys, predominantly supported by seabed sampling campaigns, and thus provide accurate bathymetry for geohazard assessment and engineering design. Data from these surveys were interpreted to characterise benthic substrate; the benthic habitat within the OA comprises soft substrate (Figure 4-18). These surveys indicate that the seabed in the OA around the subsea infrastructure such as flowlines and drill centres, mostly comprises unvegetated, soft, and unconsolidated sediments with a low but varying degree of benthic invertebrate habitation (Figure 4-19, Figure 4-20) (Ref. 465).

The Julimar field (WA-49-L) was surveyed in 2011 by Fugro (Ref. 243) to provide bathymetric and seabed geomorphological information. The Fugro survey found that sediment deposits across the Julimar fields range from coarse sand and gravel in the east and north-east, through to silt and clay in the west and south-west. Past oil and gas activity (anchor scars, drilling discharge deposits) was also evident in earlier surveys (Ref. 354).

Other geophysical and benthic habitat surveys, conducted across the Julimar fields between 2008 – 2011, reported sediments to be primarily silty, fine to medium grain calcareous sands with shell fragments present within the finer sediments (Ref. 354; Ref. 355; Ref. 356; Ref. 413; Ref. 412). Increasing sediment size correlates with decreasing water depth from the east/north-east (<120 m LAT) to the south-west (>220 m LAT) (Ref. 356; Ref. 243). Surveys within the Operational Area (Ref. 413; Ref. 412) found that benthic epifauna associated with the soft sediment seabed habitat comprise sparsely (<5%) distributed filter and deposit feeding invertebrates;

such as sea whips, soft corals, gorgonians and occasional echinoderms. Bioturbation of surveyed habitats ranged from sparse (>5% coverage) to dense (>25% coverage) indicating infauna and decapod (shrimp) and demersal fish presence.

Surveys of the Julimar Project pipeline and associated assets found that outcropping hard substrates (e.g. emergent limestone) within production licence WA-48-L (survey areas ENV001, ENV002, ENV003 shown on Figure 4-16) featured a greater abundance of invertebrate fauna, including sea whips, gorgonians and sponges; these habitats were also associated with fish such as banner fish, trevally and red emperor (Ref. 413; Ref. 412; Ref. 414). An ROV inspection of existing petroleum infrastructure associated with the Pluto pipeline (outside of the OA) found these structures also provided shelter for fish species and substrate for filter feeding species to attach to (Ref. 413). Other petroleum infrastructure within the survey areas, such as well heads, were similarly found to be associated with benthic invertebrates and fish species (Ref. 413; Ref. 412).

The benthic infauna and epifauna found within the Operational Area are representative of the wider NWMR (and EMBA) (Ref. 42; Ref. 400).

The shelf of the North-west Marine Region contains several terraces and steps. The most prominent of these features occurs as an escarpment along the NWS and Sahul Shelf at a depth of 125 m, known as the ancient coastline. Parts of the ancient coastline, particularly where it exists as a rocky escarpment, are thought to provide biologically important habitats such as fish communities in areas otherwise dominated by soft sediments (Ref. 215).

Figure 4-5 to Figure 4-7, and Figure 4-9 to Figure 4-11 illustrate habitats over a wide area and distant from the trunkline in order to provide region-wide perspective. These maps are based on the North West Shelf Marine Habitat data (DBCA) and data collected for the Wheatstone baseline study (Ref. 57). The habitats are described in terms of abiotic and biotic types, and are based on the DBCA-defined classification. Abiotic habitats include ‘sandy beach’ while biotic habitats include ‘seagrass’. The complete habitat classification is shown in the legend of each map. Habitat diversity is greatest closer to shorelines, especially around islands. The dominant subtidal habitat is referred to as ‘sand’ and covers large areas between the mainland and islands.

Note that the seaward boundaries of the DBCA-defined habitats (Figure 4-5 to Figure 4-7, and Figure 4-9 to Figure 4-11) are based on State water limits or boundaries of marine protected areas, and thus do not extend to some sections of the trunkline. To predict habitat types between the DBCA-defined habitats and the trunkline, bathymetric contour lines have been overlaid on the figures. The bathymetric contour lines Figure 4-3 to Figure 4-4 suggest an absence of complex seafloor topography (e.g. reefs, shoals etc.) between the seaward boundaries of the DBCA-defined habitats and the trunkline. Instead, the bathymetric lines suggest that seafloor in this area is characterised by a gentle slope consistent with the subtidal ‘sand’ habitat defined by DBCA.

4.3.1.2 Rankin Bank

Rankin Bank is located ~19 km east of the OA (fields). While Rankin Bank is not protected and is not a key ecological feature (KEF), it is the only large, complex bathymetrical feature on the outer western shelf of the West Pilbara region and represents habitats that are likely to play an important role in the productivity of the Pilbara region (Ref. 12). Rankin Bank has three submerged shoals delineated by the 50 m depth contour with water depths of ~18–30.5 m (Ref. 4). In 2013, the

Australian Institute of Marine Science (AIMS) and Woodside co-invested in a project to better understand the habitats and complexity of the submerged shoal ecosystems. Rankin Bank represents a diverse marine environment, predominantly composed of consolidated reef and algae habitat (~55% cover), followed by hard corals (~25% cover), unconsolidated sand/silt habitat (~16% cover), and benthic communities composed of macroalgae, soft corals, sponges, and other invertebrates (~3% cover) (Ref. 12). The proportion of cover at Rankin Bank was highest for macroalgae and hard corals, particularly at depths less than 40 m, and decreased with increasing depth (Ref. 4). Encrusting corals (reaching cover of ~12.5%) at depths less than 40 m and solitary corals (~10% cover), primarily at depths between 40 and 60 m, were also present (Ref. 4). Other benthic taxa including soft corals and sponges were present in lower proportions at all depths (Ref. 12). The high cover of macroalgae and hard corals in shallower water depths are likely due to greater light penetration and lower sand cover (Ref. 4).

Hard corals are a significant component of the benthic community of some parts of the bank, with abundance in the upper end of the range observed elsewhere on the submerged shoals and banks of north-west Australia (Ref. 4).

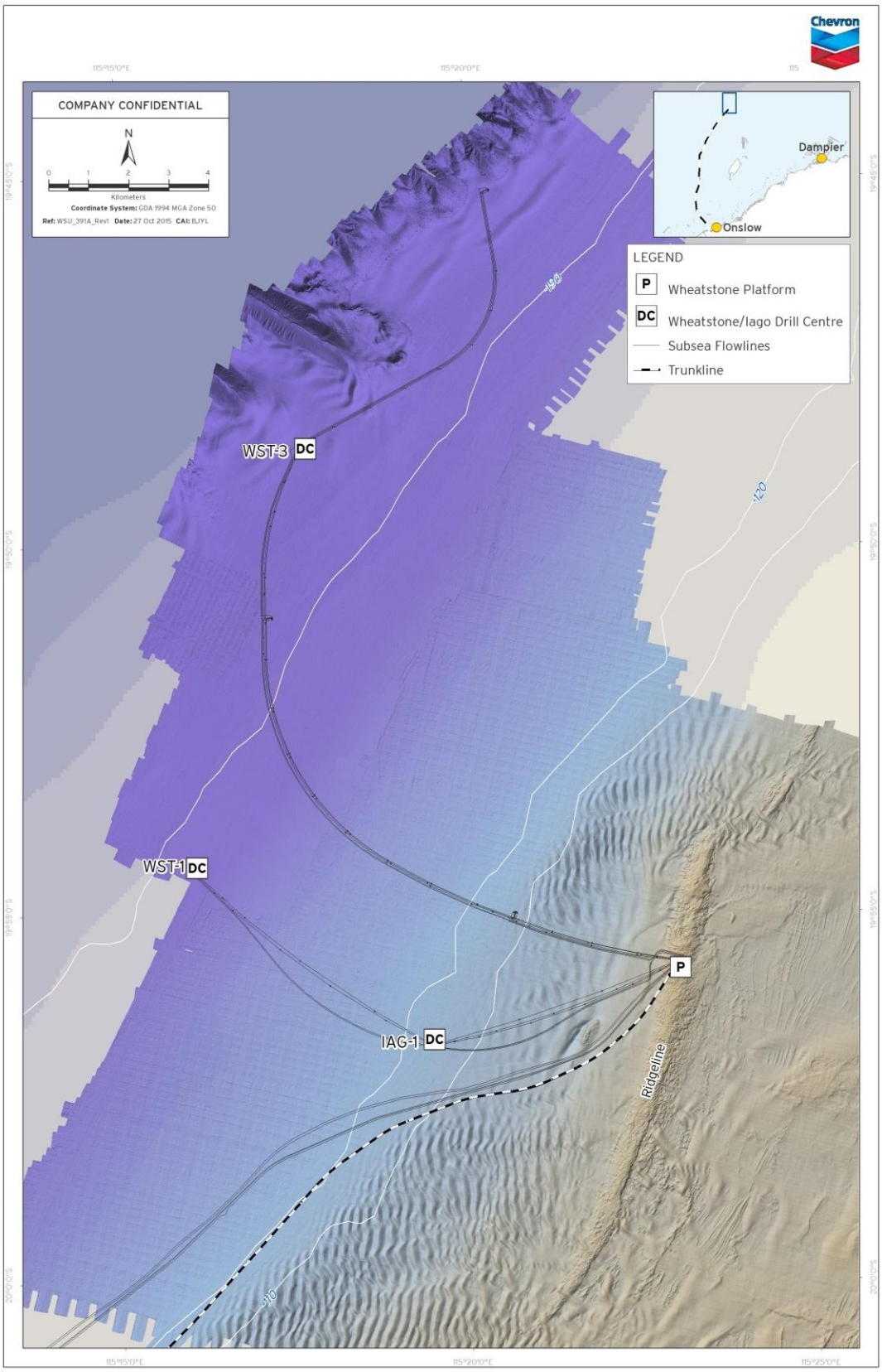


Figure 4-13: Subsea infrastructure relative to the ridgeline



Figure 4-14: Subsea infrastructure, bathymetry, and substratum associated with the platform and Iago fields

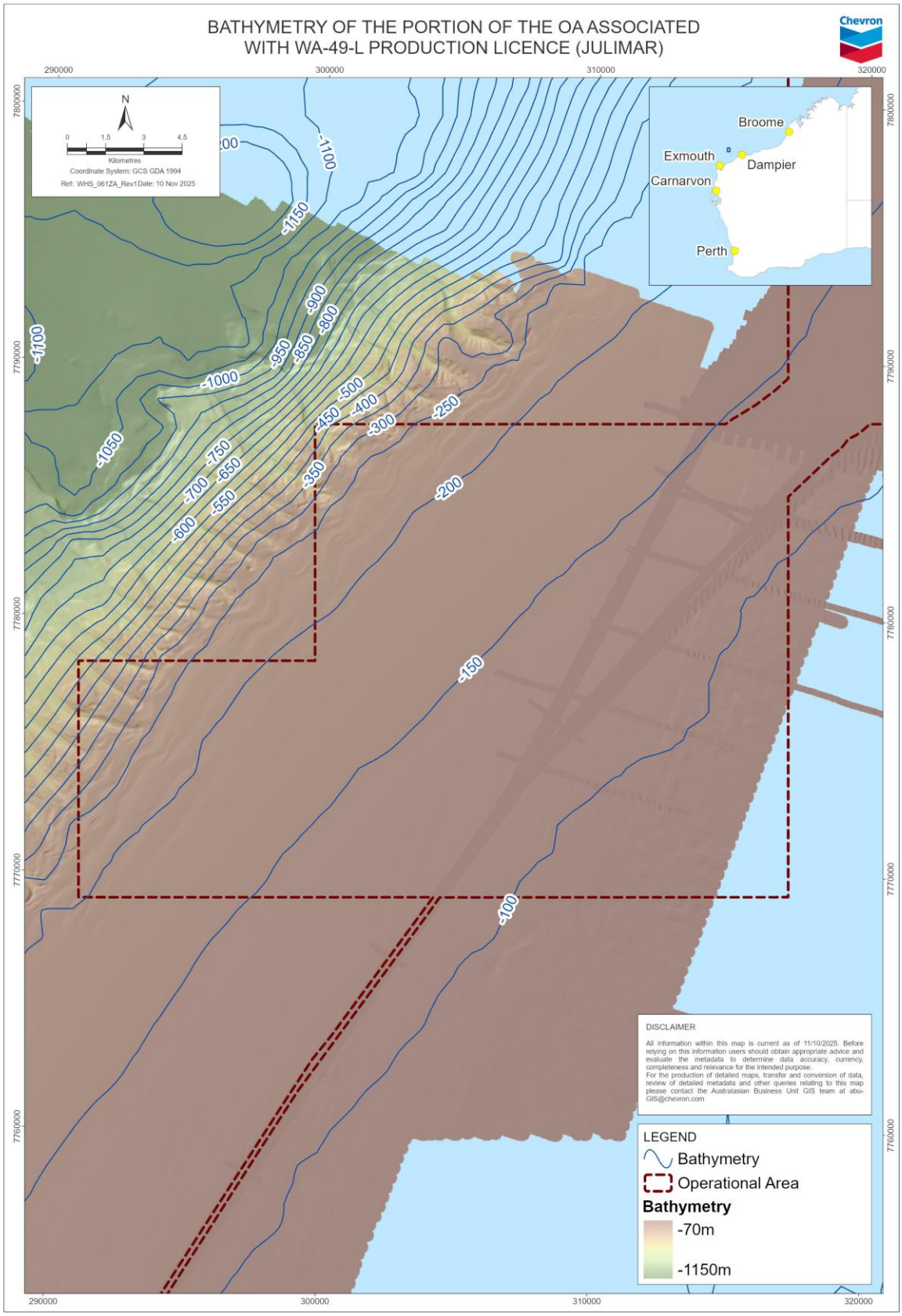


Figure 4-15: Bathymetry of the portion of the OA associated with WA-49-L production licence (Julimar) (Ref. 490)

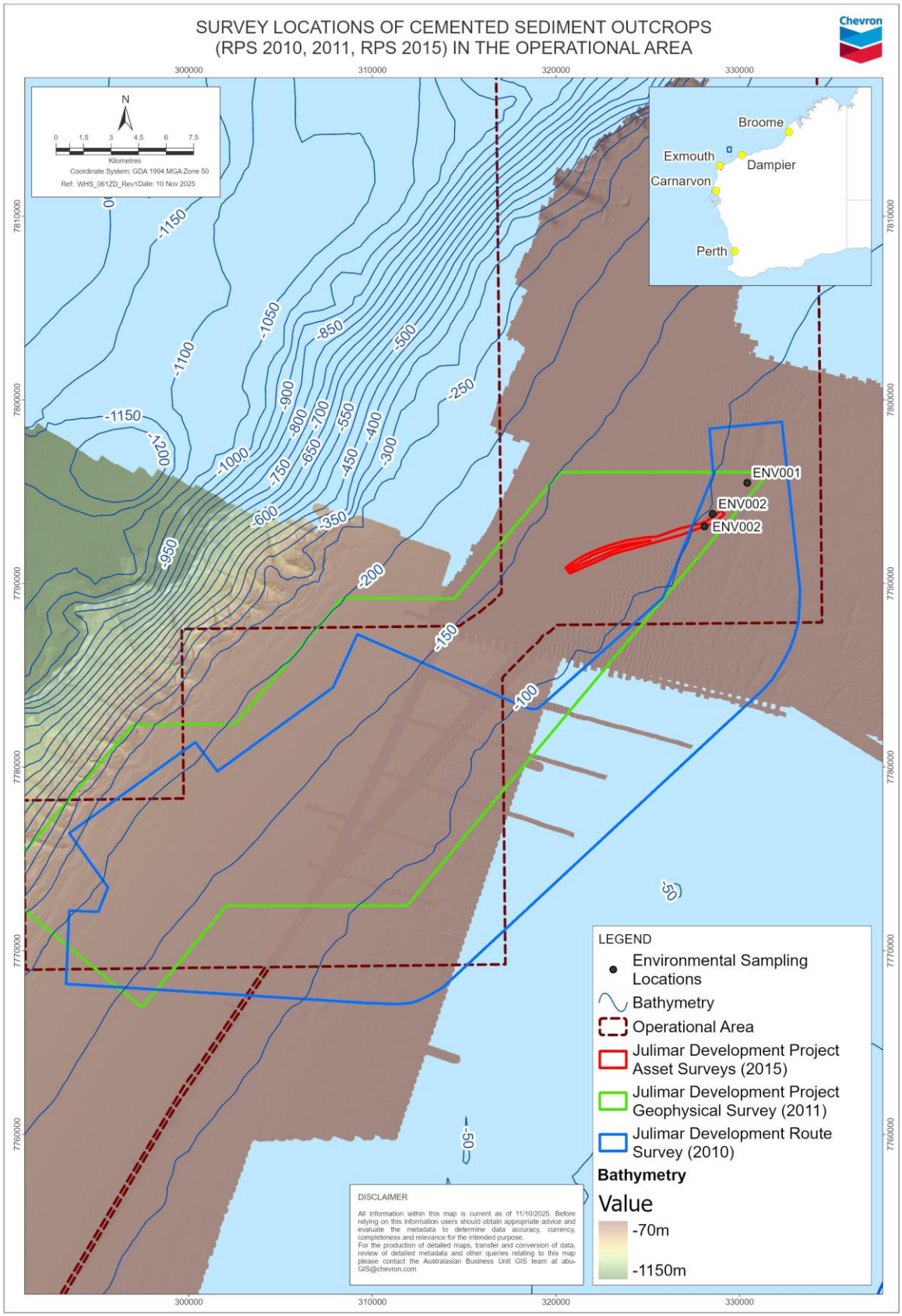
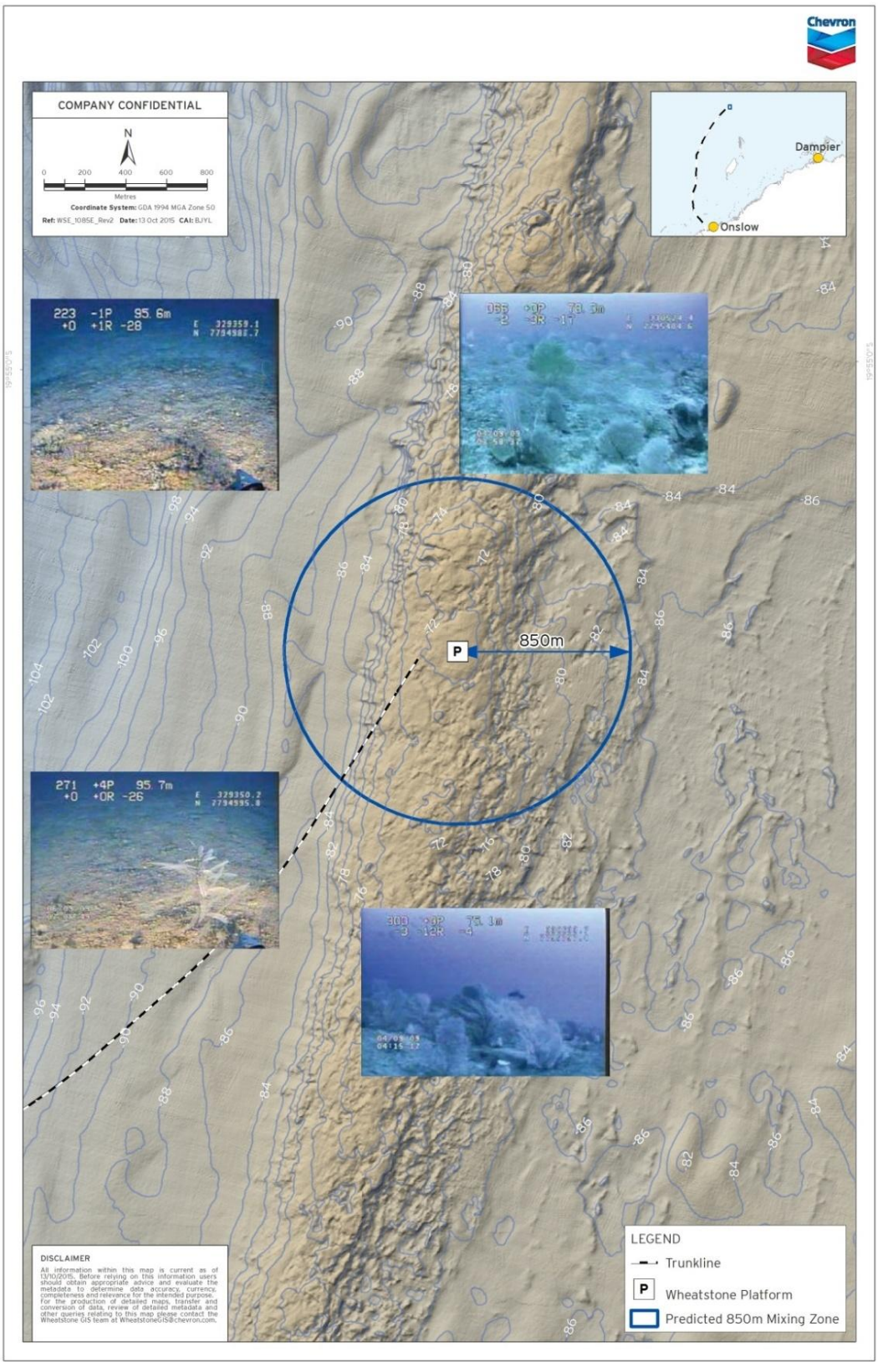


Figure 4-16: Survey Locations of Cemented Sediment Outcrops (Ref. 413; Ref. 412; Ref. 414) in the OA



Note: representative photographs are shown

Figure 4-17: Common sessile benthic fauna associated with hard substratum of the ridgeline and the adjacent soft substratum

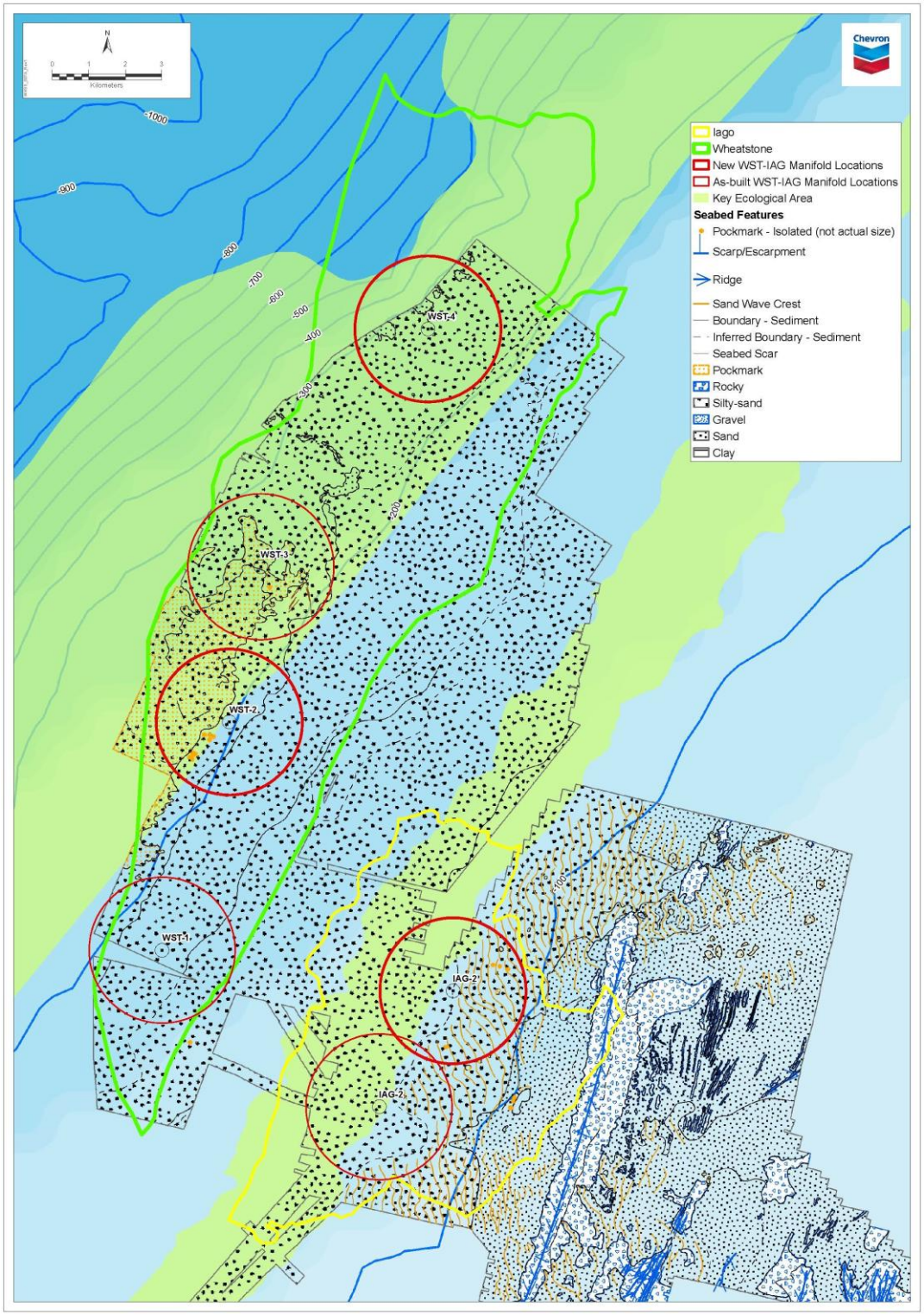


Figure 4-18: Wheatstone and Iago well locations and benthic habitat



Figure 4-19: Seabed survey image showing typical seabed habitat at IAG-1 drill centre



Figure 4-20: Seabed survey image showing typical seabed habitat at WST-3 drill centre

4.3.2 Coastal communities and habitats

Coastal communities are biological communities that inhabit the coastal zone. Coastal habitats are areas of shoreline types that do, or can, support these communities. Similarly, to benthic communities (as described in Section 4.3.1), coastal communities are likely to play roles in maintaining the integrity and diversity of coastal ecosystems, and the supply of ecological services.

Coastline interaction within the OA occurs only at the mainland where the trunkline proceeds onshore. The EMBA interfaces with coastline along the Cape Range peninsula, the Exmouth Gulf and Onslow. Island coastlines within the EMBA include the Montebello Islands, Barrow Island and Pilbara inshore islands.

CoastAdapt Shoreline Explorer (Ref. 350) incorporates the Smartline spatial database containing geomorphic classifications for Australia's coasts (previously available via Geoscience Australia (Ref. 425)). This database shows that the small section of coastline associated with the OA is predominantly sandy shores with undifferentiated soft sediment shores occurring at the border and surrounds.

Within the EMBA, there is an even distribution of hard rock, undifferentiated soft sediment and sandy shorelines along the mainland coast. Pilbara inshore islands have predominantly hard rock shorelines as do the Montebello Islands. Barrow Island has a mixture of hard rock and sandy shores.

Based on Smartline (Ref. 350), a spatial database containing geomorphic classifications for Australia's coasts, the types of shoreline present within the EMBA include rocky coasts and sandy beaches.

The Seamap Australia spatial database collates and classifies marine and coastal habitats on the Australian continental shelf (Ref. 462). Mangroves are present within the intertidal zone of the OA where the trunkline proceeds onshore at Ashburton on the mainland and in surrounding areas. Based on the Seamap dataset, isolated areas of mangroves may be present on Montebello Islands Barrow Island and other inshore Pilbara islands. Mangroves grow within the intertidal zone and are typically located within sheltered areas. The mangrove communities within the Montebello Islands are considered globally significant as they occur in lagoons of offshore islands (Ref. 173).

Listed TECs and wetlands of international importance (Ramsar wetlands) are MNES under the EPBC Act, and a relevant value and sensitivity under the OPGGS(E)R. There are no known TECs or Ramsar wetlands within the EMBA.

4.3.3 Marine fauna

Listed threatened or migratory species are MNES under the EPBC Act, and a relevant value and sensitivity under the OPGGS(E)R. The following sections identify the presence of these species, and any habitat critical to the survival (HCTS) of a species or biologically important areas (BIAs) for protected marine species within the EMBA.

HCTS of a species or ecological community are areas necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community
- to maintain genetic diversity and long-term evolutionary development
- for the reintroduction of populations or recovery of the species or ecological community (Ref. 198).

BIAs are areas and times used by protected marine species for critical life functions, such as reproduction, feeding, migration or resting (Ref. 148). These behaviours are referred to as biologically important behaviours.

Note: The Australian Marine Spatial Information System (Ref. 128) and associated HCTS and BIA geospatial datasets (Ref. 151; Ref. 137; Ref. 147) were used to verify the presence of HCTS and BIAs within the EMBA.

4.3.3.1 Marine mammals

Based on searches of the online PMST (Ref. 166; appendix e), the threatened and/or migratory marine mammal species shown in Table 4-6 may be present within the EMBA and OA. The full list of marine species identified from the PMST is provided in appendix e. HCTS of a species and BIAs associated with protected marine mammal species are listed in Table 4-7 and Table 4-8.

For the threatened and/or migratory species with BIAs within the OA (i.e. areas associated with planned activities), additional information has been provided in the following subsections. Summary descriptions of the other threatened and/or migratory marine mammal species that may be present within the EMBA are included in Appendix D of the OSMP (Ref. 101).

As shown in Table 4-8, except for Pygmy Blue and Humpback Whales, there are no other known BIAs or aggregation areas for other cetacean species that intersect the OA or EMBA; as such, it is expected that any presence cetacean species would be of a transitory nature.

Table 4-6: Presence of listed threatened and/or migratory marine mammals

Common name	OA	EMBA
Cetaceans (Whales)		
Antarctic Minke Whale (*Migratory*)	✓	✓
Blue Whale (*Endangered, migratory*)	✓	✓
Bryde's Whale (*Migratory*)	✓	✓
Fin Whale (*Vulnerable, migratory*)	✓	✓
Humpback Whale (*Migratory*)		✓
Sei Whale (*Vulnerable, migratory*)	✓	✓
Southern Right Whale (*Endangered, migratory*)	✓	✓
Sperm Whale (*Migratory*)	✓	✓
Omura's Whale (*Migratory*)	✓	✓
Cetaceans (dolphins)		
Australian Humpback Dolphin (*Vulnerable, migratory*)	✓	✓
Australian Snubfin Dolphin (*Vulnerable, migratory*)	✓	✓
Orca (*Migratory*)	✓	✓
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) (*Migratory*)	✓	✓
Sirenians		
Dugong (*Migratory*)	✓	✓

Table 4-7: HCTS of marine mammals (Ref. 147)

Common Name	HCTS location	Seasonal Presence	OA	EMBA
Southern right whale	Reproduction within Exmouth Gulf and along Ningaloo coast	Approximately May to September		✓

Table 4-8: Presence of BIAs for marine mammals (Ref. 166; Ref. 148)

Common name	BIA behaviour	Seasonal presence	OA	EMBA
Dugong (all BIAs occur within Exmouth Gulf)	Breeding	Year-round		✓
	Calving	Year-round		✓
	Foraging (high density seagrass beds)	Year-round		✓
	Nursing	Year-round		✓
Humpback Whale	Migration (north and south) from North-west Cape up to the Kimberley extending from the coast out to 50-100 km offshore	Northern migration, late July to September	✓	✓
	Resting within Exmouth Gulf	Winter		✓
Pygmy Blue Whale	Foraging offshore of the Ningaloo coast	(Not defined in database)		✓
	Migration (northern and southern) from Augusta to Derby predominantly along the shelf edge but close to coast in the Exmouth-Montebello Islands area during southern migration.	Northern migration enters Perth canyon January to May; passes Exmouth April to August; continues north to Indonesia. Southern migration follows WA coastline from October to late December.	✓	✓

4.3.3.1.1 Humpback Whale

Humpback Whales (WA subpopulation) migrate annually between their feeding grounds in Antarctic waters and their calving grounds in Kimberley waters (Ref. 295). The exact timing of the migration period can vary from year-to-year, however in general the species are sighted in southern Australian waters in May, they then migrate northwards and southwards along the coast, with sightings rare after November (Ref. 199; Ref. 451).

Northbound Humpback Whales tend to remain around the 200 m water depth contour, while southbound Humpback Whales tend to travel closer to Barrow Island and generally occur between 50 m and 200 m water depths (Ref. 295). The migration (north and south) BIA corridor extends from the coast out to ~100 km offshore in the Kimberley and Pilbara regions; reducing to ~50 km offshore south of North West Cape (Figure 4-21).

The Humpback Whale breeding and calving grounds in the southern Kimberley region extend from Broome to the northern end of Camden Sound, particularly between Lacepede Islands and Camden Sound (Ref. 295). Breeding and calving occur in the region between mid-August and early-September (Ref. 295), followed by the start of the southern migration. Exmouth Gulf and Shark Bay are both important resting areas for migrating Humpback Whales, particularly for cow-calf pairs on the southern migration (Ref. 295). The southerly migration, from around the Lacepede Islands (north of Broome) extends parallel to the coast on approximately the 20–30 m depth contour (Ref. 295; Ref. 289. Southbound migration is more diffuse and irregular, lacking an obvious peak. An increase in southerly migrating individuals may be observed between the North West Cape and

the Montebello Islands between August to early September (Ref. 295; Ref. 49. The predicted peaks in Humpback Whale migration in the Montebello Islands region are late-July (northern migration) and early-September (southern migration) (Ref. 295). Females and calves are known to stop and rest in Exmouth Gulf and Shark Bay (Ref. 295).

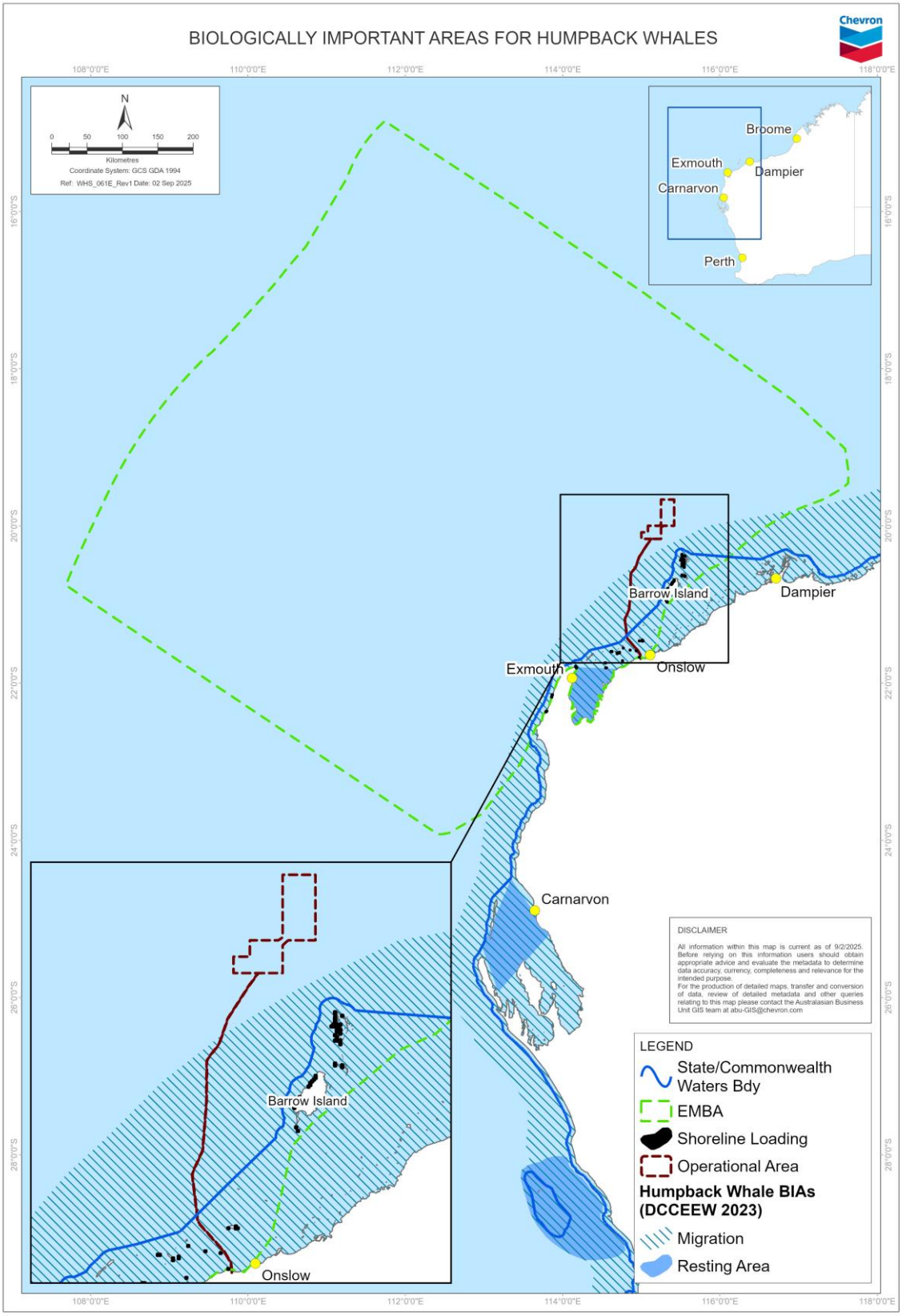


Figure 4-21: Humpback Whale BIAs within vicinity of OA

4.3.3.1.2 Pygmy Blue Whale

Pygmy Blue Whales migrate along the west coast of Australia in the northern direction to their breeding grounds near the Indonesian Archipelago from mid-February to early June, and in the southern direction to the feeding grounds in the Southern Ocean from mid-November to early January (Ref. 248). Recent information collected from satellite tags shows that the Banda and Molucca seas in Indonesia are the likely destination for the northern migration of whales that feed off the Perth Canyon (Ref. 245; Ref. 207). These seas are considered the northern terminus of the migration and potentially the breeding and calving ground, but may also act as a feeding area (Ref. 207).

Acoustic monitoring conducted by McCauley and Jenner (Ref. 331) in the Exmouth and northern Montebello Islands region identified a peak period in the northern migration of Pygmy Blue Whales from April to August, and from November through to late December during the southern migration. It was estimated by McCauley and Jenner (Ref. 331) that 700–1,500 Pygmy Blue Whales migrated southward past Exmouth in 2004.

CAPL noise loggers were deployed for a full year period in 2019 detected Pygmy Blue Whales on their northern and southern migration (Ref. 49). The detection of Pygmy Blue Whale song peaked from mid-April to the end of July, and then again from beginning of November through to early-December (Ref. 49).These peaks correspond with previously identified northern and southern migration peak periods of Pygmy Blue Whales. Pygmy Blue Whale song was detected on more days than any other type of mysticete (baleen whale) sound (Ref. 49).

It is known the Pygmy Blue Whales generally tend to follow the WA continental shelf edge between their feeding grounds at the Perth Canyon and the North West Cape. However, the migratory pathway of whales north of the North West Cape is less defined. The migration BIA for Pygmy Blue Whales has been historically described as occurring along the continental shelf edge between 500 m and 1,000 m water depths (Ref. 216; Ref. 200).

Ferreira et al. (Ref. 234) analysed available satellite tracking data for Pygmy Blue Whales and environmental data to predict migration habitat suitability. The analyses determined that large areas along the continental shelf break (~200 m bathymetry contour) and slope off the WA coast are suitable habitat for migration. North of Ningaloo Reef (and extending to Ashmore Reef) there was a separation of suitable migration habitat between the deep ocean basin area and slope habitat (Ref. 234). Furthermore, other studies (e.g. Ref. 207; Ref. 248) suggest that Pygmy Blue Whales are likely to transit through deeper and further offshore waters north of the North West Cape. Satellite tracking data showed Pygmy Blue Whales on their northern migration travelled relatively near to the Australian coast (100±1.7 km) in water depths of 1,369.5±47.4 m, until reaching the North West Cape, after which they travelled further offshore (238±14 km) into progressively deeper water (2,617±143.5 m) (Ref. 207). Data from tagged Pygmy Blue Whales also indicates that during their northern migration, the width of the migration path increases north of Montebello Islands, from ~175 km to ~690 km at its widest point (Ref. 446). Gavrilov et al. (Ref. 248) conducted a study using an array of ocean bottom seismographs to detect Pygmy Blue Whales traversing the area to the northwest of the North West Cape during their southern migration. This study found that Pygmy Blue Whales migrated southward much further from the WA coast compared to the northbound migration, at distances of up to 400 km from shore (Ref. 248). Pygmy Blue Whales have demonstrated extensive use of continental slope habitat off WA and only limited use of shelf waters (Ref. 446). This contrasts with southern

Australia, where use of the shelf and shelf break by Pygmy Blue Whales is more common.

McCauley and Jenner (Ref. 331) recorded 24-hour average counts of Pygmy Blue Whales along the WA coast during their migrations periods and found that the migratory habits are short and sharp pulses for the southbound Pygmy Blue Whales and a more protracted pulse of northbound Pygmy Blue Whales. This suggests that the southern migration Pygmy Blue Whales are swimming purposefully through the area to reach their southern feeding grounds, thus resulting in the data collected for Pygmy Blue Whales migrating through the area is not confounded by lingering Pygmy Blue Whales but they are swimming steadily past. A difference in travel speed was also reported by Thums *et al* (Ref. 446), where median speed during northward migration was 2.4 km/h (<0.1–15.4 km/h, n=22), and southward migration was 4.0–5.0 km/h (n=2).

A 2022 study incorporating data collected from both passive acoustic monitoring and satellite telemetry data, was analysed and determined the 'most important areas' for migration' along the WA coast as an almost continuous stretch from southern WA to around the latitude of Rowley Shoals, and thereafter was more dispersed (Ref. 446). The northern extent of the OA intersects the most important area for migration (Figure 4-22).

Ferreira et al. (Ref. 234) compiled satellite tracking data for 38 Pygmy Blue Whales and used movement models to distinguish between low and high move persistence and correlated the data with environmental variables. Typically, high move persistence is indicative of migration, while low move persistence is generally indicative of foraging or reproduction (Ref. 446). In alignment with other studies, the continental slope off the north- west Australian coast was predicted to be suitable habitat for migration (Ref. 234).

Predictions based on passive acoustic data indicate greatest numbers of Pygmy Blue Whales during April and June/July (northern migration), and November and December (southern migration) (Ref. 446). Monthly spatial predictions indicated higher densities around the Montebello Island region during May and June (northern migration) and November and December (southern migration) (Ref. 446).

Pygmy Blue Whales aggregate in the Australian summer to feed at known locations on or adjacent to the continental shelf including the Perth Canyon, Great Southern Australian Coastal Upwelling System, and the sub-tropical convergence zone (Ref. 446). The areas around the Perth Canyon and Australian Coastal Upwelling System correspond to 'Foraging Areas' and 'Known Foraging Areas' within the Conservation Management Plan for the Blue Whale (Ref. 200). This plan also identifies 'Possible Foraging Areas', including two in WA, one off the Ningaloo coast, and another around Scott Reef. Neither of these areas intersect the OA, however, the Ningaloo coast foraging area lies within the EMBA.

Ferreira et al. (Ref. 234) analysed available satellite tracking data for Pygmy Blue Whales and environmental data to predict foraging habitat suitability. Suitable foraging habitat was identified as a large semi-continuous area from the southern extent (28°S) to the northeastern edge of the modelled region (11.5°S). The model indicated high habitat suitability extending out from the continental shelf break (200 m bathymetry contour) in the northwest of WA; with the highest relative suitability occurred from just south of Shark Bay to Scott Reef along the continental shelf break and slope, and also extending to the Exmouth Plateau (Ref. 234). The study indicates suitable habitat is related to dynamic and localised oceanic processes that may occur at different temporal scales (Ref. 234).

Thums et al. (Ref. 446) determined that Pygmy Blue Whale movement off north-west WA was predominantly relatively fast, directed travel (high move persistence) interspersed with relatively short (median 28 h) periods of low move persistence (Ref. 446). This high move persistence is indicative of migration, while the low move persistence is generally indicative of foraging (Ref. 446). Data collected from both passive acoustic monitoring and satellite telemetry data, was analysed and determined the 'most important areas' for foraging along the WA coast included the Perth Canyon and vicinity, the shelf edge off Geraldton, and discontinuous use of the shelf edge from Ningaloo Reef to Rowley Shoals (Ref. 446). Although foraging areas are described as static, they are likely to be dynamic given their dependence on presence of prey (Ref. 446; Ref. 387). The OA does not intersect with the most important area for foraging.

The defined migratory BIA for Pygmy Blue Whales overlaps the OA. In addition, it is expected based on satellite tracking and acoustic detection studies that Pygmy Blue Whales are likely to travel in the northern areas of the OA, particularly on their southern migration (peak period November to December), but also during the northern migration (peak period May to June). While foraging BIAs have not been identified along the North West Shelf (NWS), recent analysis indicates that there may be short interspersed periods of foraging occurring along the shelf edge during migration (Ref. 446).

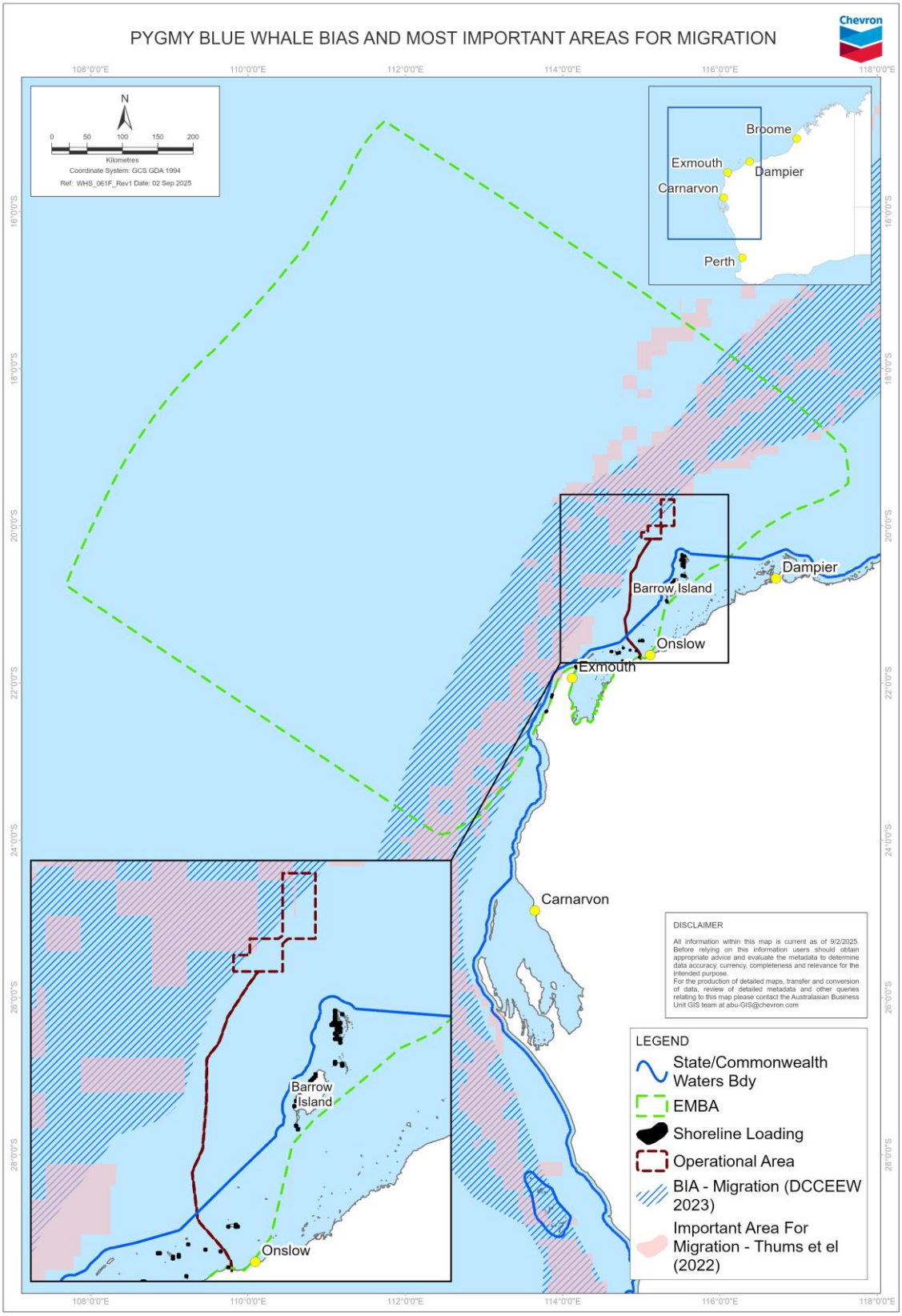


Figure 4-22: Pygmy Blue Whale BIA and most important areas for migration

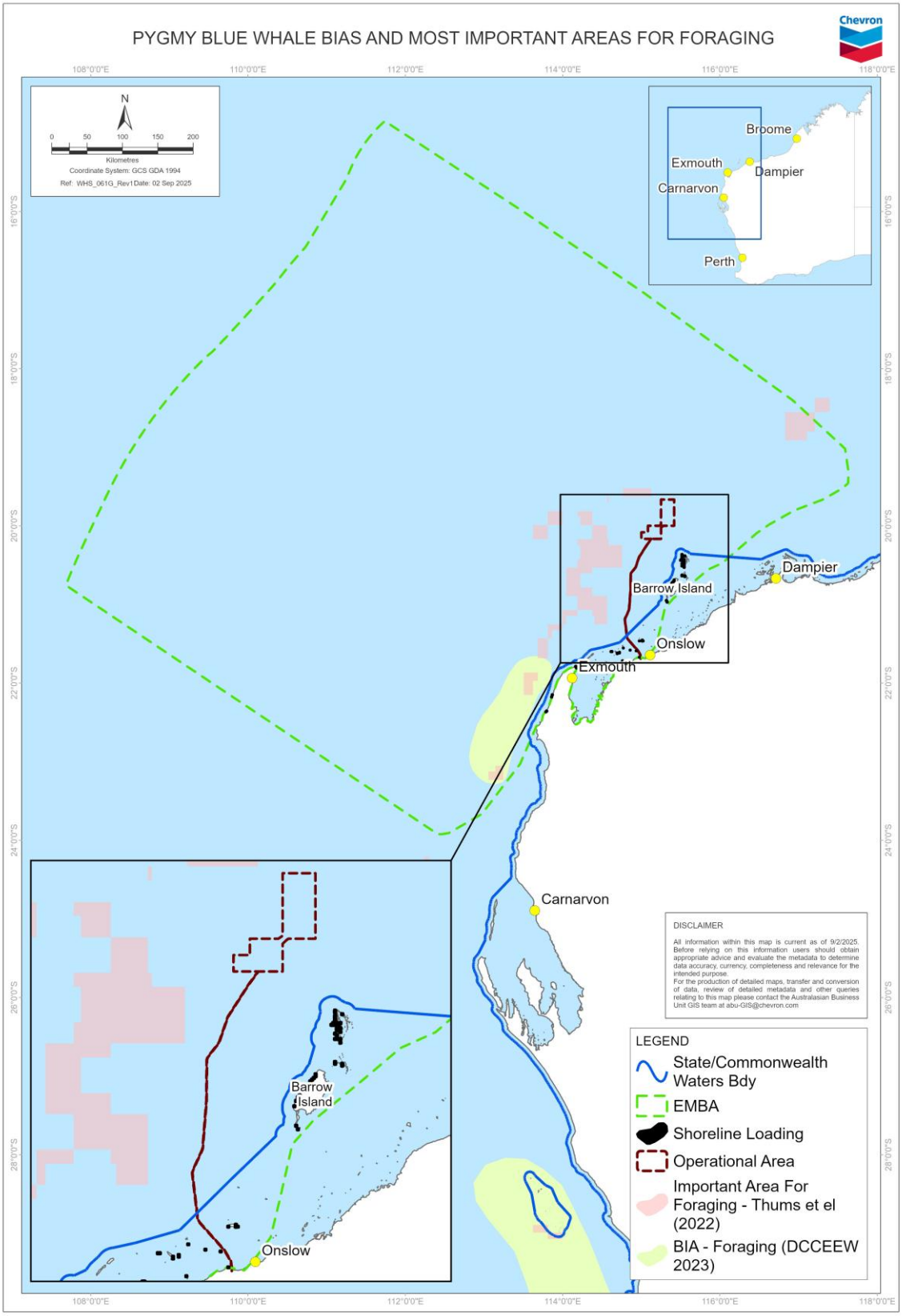


Figure 4-23: Pygmy Blue Whale BIA and most important areas for foraging

4.3.3.2 Reptiles

Based on searches of the online PMST (Ref. 166; appendix e), the threatened and/or migratory reptile species shown in Table 4-9 may be present within the OA/EMBA. The full list of marine species identified from the PMST is provided in appendix e. HCTS of marine turtle species, or BIAs associated with protected marine reptile species, are listed in Table 4-10 and Table 4-11 respectively.

For the threatened and/or migratory species with HCTS or BIAs within the OA or EMBA (i.e. areas associated with planned activities), additional information has been provided in the following subsections. Summary descriptions of the other threatened and/or migratory reptile species that may be present within the EMBA are included Appendix D of the OSMP (Ref. 101).

Table 4-9: Presence of listed threatened and/or migratory reptiles

Common name	OA	EMBA
Sea snakes		
Leaf-scaled Sea Snake (*Critically endangered*)	✓	✓
Short-nosed Sea Snake (*Critically endangered*)	✓	✓
Turtles		
Flatback Turtle (*Vulnerable, migratory*)	✓	✓
Green Turtle (*Vulnerable, migratory*)	✓	✓
Hawksbill Turtle (*Vulnerable, migratory*)	✓	✓
Leatherback Turtle (*Endangered, migratory*)	✓	✓
Loggerhead Turtle (*Endangered, migratory*)	✓	✓
Crocodile		
Saltwater Crocodile (*Migratory*)	✓	✓

Table 4-10: Habitat critical to the survival of marine turtles (Ref. 137)

Common name	Location	Seasonal presence	Occurrence descriptor	OA	EMBA
Loggerhead Turtle	Nesting on beaches in Exmouth Gulf and Ningaloo Coast. 20 km radius internesting buffer	Nov–May	Known to occur		✓
Green Turtle	Nesting on beaches within the North-west Shelf: Ningaloo coast, Exmouth Gulf, Onslow coast, associated inshore islands, Barrow Island and Montebello Islands. 20 km radius internesting buffer.	Nov–Mar	Known to occur		✓
Hawksbill Turtle	Nesting on beaches in vicinity of Onslow coast and associated inshore islands, Barrow Island and Montebello islands. 20 km radius internesting buffer.	Oct–Feb	Known to occur	✓	✓
Flatback Turtle	Nesting on beaches on Pilbara coast, inshore islands and offshore islands including Barrow Island and Montebello Islands. 60 km radius internesting buffer.	Oct–Mar	Known to occur	✓	✓

Table 4-11: Presence of BIAs for reptiles (Ref. 151)

Common name	BIA behaviour	Seasonal presence	OA	EMBA
Flatback Turtle	Aggregation			✓
	Foraging	Summer		✓
	Internesting			✓
	Internesting buffer	Spring, Summer	✓	✓
	Mating	Summer		✓
	Nesting	Spring, Summer	✓	✓
Green Turtle	Aggregation			✓
	Basking	Summer		✓
	Foraging	Summer		✓
	Internesting	Summer		✓
	Internesting buffer	Summer		✓
	Mating	Summer		✓
	Nesting	Summer		✓
Hawksbill Turtle	Foraging	Year-round, spring, early-summer		✓
	Internesting	Spring, early-summer		✓
	Internesting buffer	Year-round, spring to late-summer	✓	✓
	Mating	Year-round, spring, early-summer		✓
	Nesting	Year-round, spring to late-summer		✓
Loggerhead Turtle	Internesting buffer	Early summer to late Autumn		✓
	Nesting	Early summer		✓

4.3.3.2.1 Flatback Turtle

Montebello and Barrow islands supports Flatback Turtle nesting, occurring from October to March, with a peak in December to January. The Montebello Islands and Barrow Island are identified as nesting HCTS of the species, as is the 60 km internesting buffer around the Montebello Islands (Ref. 129, Figure 4-24).

Typically, Flatback Turtle nesting on Barrow Island occurs between October and March, with peak nesting activity occurring between November and January. On Barrow Island, nesting activity is concentrated on the east coast on sandy, low-sloped, low-energy beaches with wide, shallow intertidal zones (Ref. 392; Ref. 391). Limited nesting activity has also been recorded on the south-west, north, and north-east beaches of Barrow Island (Ref. 388).

During internesting, turtles remain close to the nesting beach or rookery (Ref. 129). The 60 km internesting buffer defined within the Recovery Plan for Marine Turtles in Australia (Ref. 129) is based primarily on the movements of tagged internesting Flatback Turtles in WA (Ref. 482). The study tracked 56 turtles from four different rookeries, which demonstrated varying internesting movements, with distances

ranging from 3–62 km, with some turtles at all four rookeries remaining within 10 km of their nesting beaches. However, tracking data showed these movements were largely longshore movements in nearshore coastal waters or travel between island rookeries and the adjacent mainland, which represented the greater distances (Ref. 482). There is little evidence to suggest that Flatback Turtles move to deep offshore waters during internesting periods.

A habitat suitability modelling study for internesting Flatback Turtles in the NWS region of WA (Ref. 483) was conducted to identify areas of suitable Flatback Turtle internesting habitat and determine overlap with identified industrial hazards. The study used a turtle tracking dataset of 47 nesting female turtles from five important rookeries in the NWS study area. The results showed internesting Flatback Turtles from all rookeries remained within water depths of <44 m, with a mean depth of <10 m (Ref. 483). Results also showed internesting turtles from all rookeries remained within <28 km of the nearest coast, with a mean distance from the coast of <6.1 km. The habitat suitability modelling study defined suitable Flatback Turtle internesting habitat as water depths of 0–16 m within 5–10 km of the coast. Unsuitable Flatback Turtle internesting habitat was defined as waters >25 m deep and >27 km from the coast (Ref. 483).

Another recent study involving satellite tracking data for 11 Flatback Turtles following nesting on the Lacepede Islands (Ref. 447) found that Flatback Turtles remained at an average distance of 15.75±12.25 km from the nesting beach in water depths of <20 m.

Other previous studies (e.g. Ref. 196; Ref. 261; Ref. 389) have also presented findings that internesting behaviour was only observed in water depths of <40 m. One of these studies (Ref. 261) further indicates that internesting Flatback Turtles have relatively shallow dives, with 85% of the time during spent in ≤20 m water depth, of which most was spent in 5–10 m (27±2.7%) and 10–15 m (22.3±3.5%) water depths.

The portions of the OA encompassing the platform and fields are located in waters classified as unsuitable for internesting Flatback Turtles. The majority of the OA associated with the trunkline is also considered unsuitable, however, the nearshore and onshore component of the trunkline lies within shallow waters and sandy beaches where Flatback Turtle BIAs have been identified (Figure 4-24).

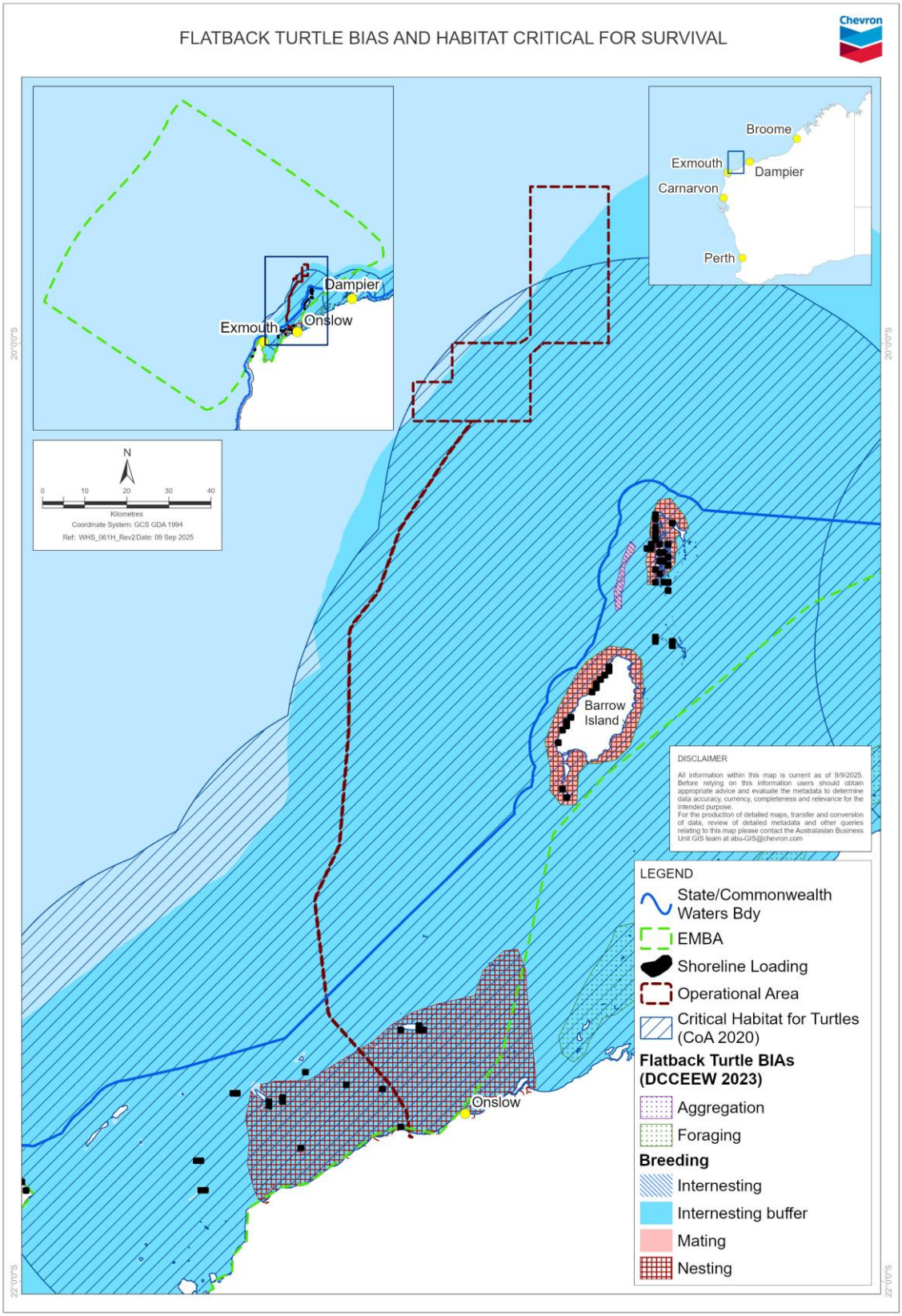


Figure 4-24: Flatback turtle BIAs and habitat critical for survival

4.3.3.2.2 Hawksbill Turtle

The WA hawksbill turtle stock is one of the three stocks within Australia (Ref. 129). Most of the nesting for this stock is located in the Pilbara (Ref. 129). The key nesting and inter-nesting areas in Australia include the Dampier Archipelago, the Ningaloo and Jurabi Coasts, and Thevenard, Barrow, Lowendal and Montebello Islands (Ref. 129). The estimated size of the reproductive population of WA stock is small (Ref. 72). For example, it has been estimated as an overall reproductive population at Barrow Island of 100, an additional 1,000 in the Lowendal Islands, and 1,300 in the Montebello Islands (Ref. 72). There is a much lower number (50) of Hawksbill Turtles estimated as nesting on Thevenard Island and this number is also small in comparison to other species (Green, Flatback) that utilise the island (Ref. 390).

The Montebello Islands, Lowendal Islands and Thevenard Island are identified as nesting habitat critical to the survival of the WA stock, as is the 20 km internesting buffer around the Islands (Ref. 129). Islands situated along the coast from the Dampier Archipelago southwards to the Exmouth Gulf and their associated 20 km internesting buffer form addition habitat critical to the survival of the species (Ref. 148). Hawksbill turtles (*Eretmochelys imbricata*) are expected to be present within these areas between October and February (Ref. 129).

Monitoring of Barrow Island hawksbill turtle nesting has found that nesting activity is more temporally and spatially diffuse than flatback and green turtle nesting activity and occurs predominantly on small, rocky, east coast beaches. Nesting on Barrow Island peaks in October (Ref. 65) and hawksbill turtles typically have an internesting interval of 14.5 days and a remigration interval of approximately three years (Ref. 149).

During internesting turtles remain close to the nesting beach or rookery (Ref. 129). Satellite tracking of hawksbill turtles found that they remained in shallow coastal waters (<10 m deep) post nesting (Ref. 392).

BIAs for Hawksbill Turtles have been identified on and surrounding Thevenard Island which lies to the east of the OA. The internesting buffer for this nesting site as well as critical habitat for turtles intersects the OA at the portion of the trunkline where it enters shallower water depths before proceeding onshore (Figure 4-25). The remainder of the OA lies within water depths considered to be too deep for internesting Hawksbill Turtles.

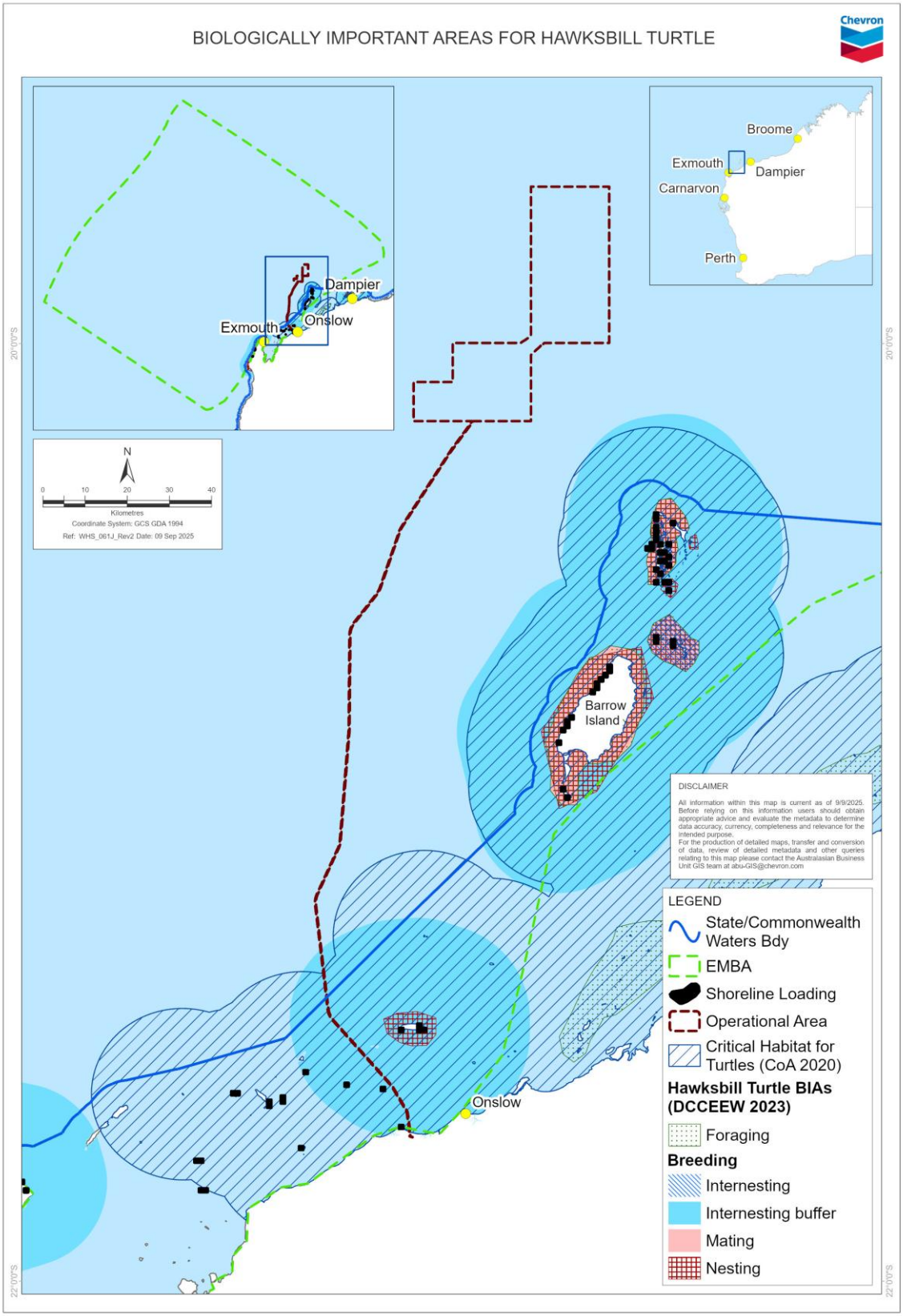


Figure 4-25: Hawksbill turtle BIAs and critical habitat

4.3.3.3 Fishes, including sharks and rays

Based on searches of online PMST (Ref. 166; appendix e), the threatened and/or migratory fish species listed in Table 4-12 may be present within the EMBA. The full list of marine species identified from the PMST is provided in appendix e. Table 4-13 lists the BIAs associated with regionally significant fish species.

For the threatened and/or migratory species with BIAs within the OA or EMBA (i.e. areas associated with planned activities), additional information has been provided in the following subsections. Summary descriptions of the other threatened and/or migratory fish species that may be present within the EMBA are included in Appendix D of the OSMP (Ref. 101).

Table 4-12: Presence of listed threatened and/or migratory fishes, including sharks and rays

Common name	OA	EMBA
Dwarf Sawfish (*Vulnerable, migratory*)	✓	✓
Freshwater Sawfish (*Endangered, migratory*)	✓	✓
Giant Manta Ray (*Migratory*)	✓	✓
Green Sawfish (*Vulnerable, migratory*)	✓	✓
Grey Nurse Shark (west coast population) (*Migratory*)	✓	✓
Longfin Mako (*Migratory*)	✓	✓
Narrow Sawfish (*Migratory*)	✓	✓
Oceanic Whitetip Shark (*Migratory*)	✓	✓
Porbeagle (*Migratory*)		✓
Reef Manta Ray (*Migratory*)	✓	✓
Shortfin Mako (*Migratory*)	✓	✓
Whale Shark (*Vulnerable, migratory*)	✓	✓
Scalloped Hammerhead (*Conservation dependent*)	✓	✓
Great White Shark (*Vulnerable, migratory*)	✓	✓

Table 4-13: Presence of BIAs for fishes, including sharks and rays (Ref. 148)

Common name	BIA behaviour	Seasonal presence	OA	EMBA
Whale Shark	Foraging northward from Ningaloo along 200 m isobath	Spring	✓	✓
	Foraging (high density prey) Ningaloo Marine Park and adjacent Commonwealth waters	Apr-Jun. Autumn		✓

4.3.3.3.1 Whale Sharks

The BIA is associated with foraging behaviours during northward migration from Ningaloo Reef / North West Cape along the 200 m isobath during July to November (Ref.454, Figure 4-26).

Whale Sharks have a global distribution in tropical and warm temperate waters, including within Australian waters (mainly Northern Territory, Queensland and northern WA) (Ref. 135; Ref. 454). Within Australia, Whale Sharks form seasonal aggregations at Ningaloo Reef (March to July), Christmas Island (December to January), and in the Coral Sea (November to December) (Ref. 454). Ningaloo Reef

is considered the main known seasonal aggregation area (Ref. 255). Whale Sharks aggregate off Ningaloo Reef between March and July each year to feed (Ref. 135; Ref. 432). Their presence off Ningaloo Reef has been linked to coral mass spawning timing (Ref. 135). The Whale Shark is a suction filter feeder, with a diet comprising planktonic and nektonic prey, and feeds at or close to the water's surface by swimming forward with mouth agape, sucking in prey (Ref. 135). While the species is generally encountered close to or at the surface, it will regularly dive and move through the water column. Following the aggregation period around Ningaloo Reef, their distribution is largely unknown, although three migration routes from Ningaloo reef have been identified through various surveys (Ref. 432):

- north-west, into the Indian Ocean
- directly north, towards Sumatra and Java
- north-west, passing through the NWS region, travelling along the shelf break and continental slope.

As the known foraging Whale Shark BIA occurs within the OA, there is potential that foraging behaviours overlap with planned activities between July and November.

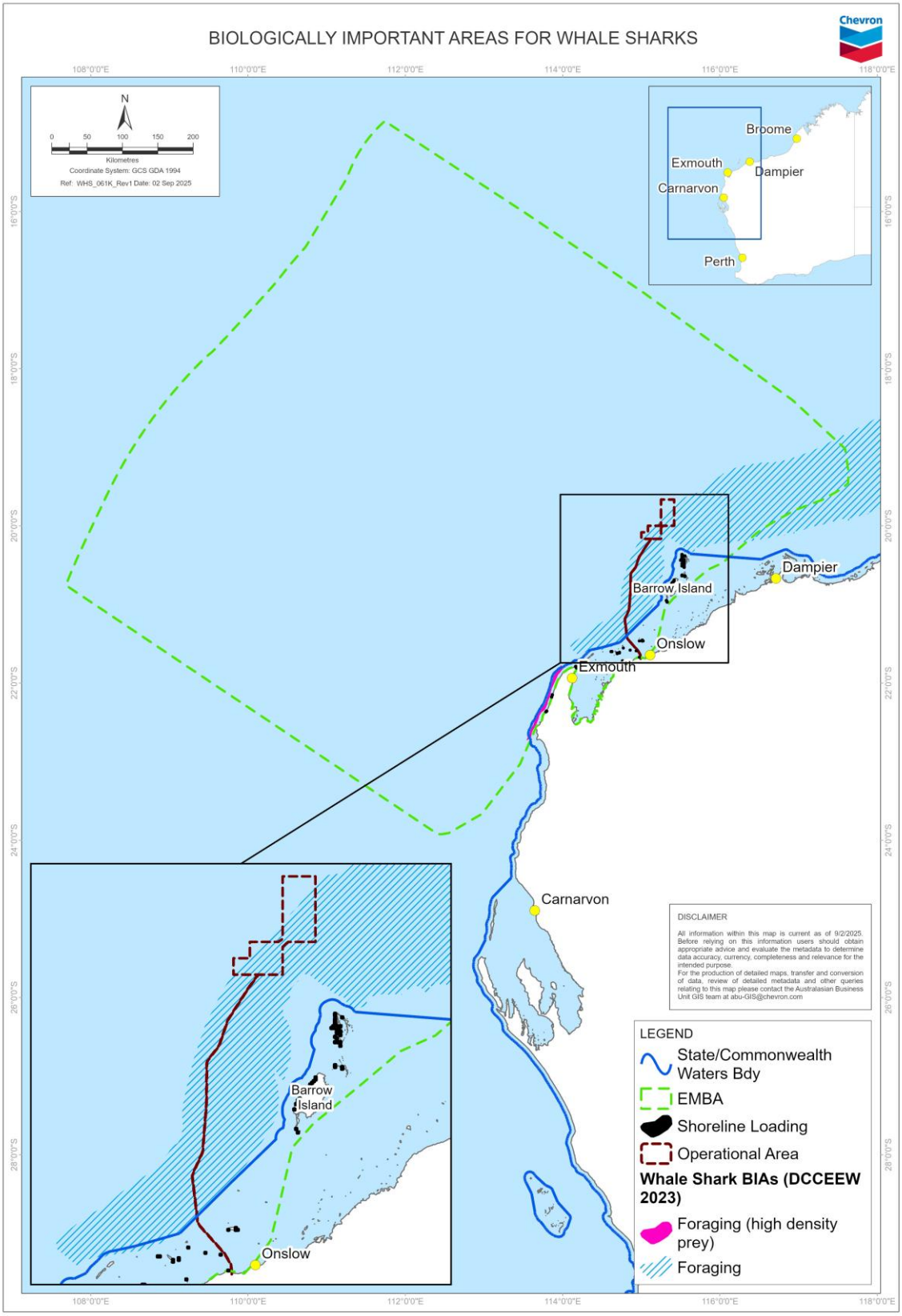


Figure 4-26: Whale Shark BIAs for migration and foraging

4.3.3.4 Seabirds and shorebirds

Based on searches of the online PMST (Ref. 166; appendix e), the threatened and/or migratory seabird and shorebird species shown in Table 4-14 may be present within the EMBA. The full list of marine species identified from the PMST is provided in appendix e. BIAs associated with regionally significant seabird and shorebird species are listed in Table 4-15.

For the threatened and/or migratory species with BIAs within the OA (i.e. the area associated with planned activities), additional information has been provided in the following subsections. Summary descriptions of the other threatened and/or migratory seabird and shorebird species that may be present within the EMBA are included Appendix D of the OSMP (Ref. 101)

Table 4-14: Presence of listed threatened and/or migratory seabirds and shorebirds

Common name	OA	EMBA
Abbott's Booby (*Endangered*)		✓
Asian Dowitcher (*Vulnerable, migratory*)	✓	✓
Australian Fairy Tern (*Vulnerable*)	✓	✓
Australian Painted Snipe (*Endangered*)	✓	✓
Bar-tailed Godwit (*Endangered*)	✓	✓
Black-browed Albatross (*Vulnerable, migratory*)		✓
Bridled Tern (*Migratory*)		✓
Campbell Albatross (*Vulnerable, migratory*)		✓
Caspian Tern (*Migratory*)		✓
Christmas Island White-tailed Tropicbird (*Endangered*)	✓	✓
Common Greenshank (*Endangered, migratory*)	✓	✓
Common Noddy (*Migratory*)	✓	✓
Common Sandpiper (*Migratory*)	✓	✓
Curlew Sandpiper (*Critically endangered, migratory*)	✓	✓
Eastern Curlew (*Critically endangered, migratory*)	✓	✓
Flesh-footed Shearwater (*Migratory*)		✓
Greater Frigatebird (*Migratory*)	✓	✓
Greater Crested Tern (*Migratory*)	✓[5]	✓
Greater Sand Plover (*Vulnerable, migratory*)	✓	✓
Indian Yellow-nosed Albatross (*Vulnerable, migratory*)	✓	✓
Lesser Frigatebird (*Migratory*)	✓	✓
Little Tern (*Vulnerable, migratory*)	✓	✓
Northern Siberian Bar-tailed Godwit (menzbieri) (*Endangered*)	✓	✓
Oriental Plover (*Migratory*)	✓	✓
Oriental Pratincole (*Migratory*)	✓	✓
Osprey (*Migratory*)	✓	✓

[5] PMST search does not show that this species has a presence within the OA, however, there is a BIA for this species which intersects the OA. Suspected error in PMST.

Common name	OA	EMBA
Pectoral Sandpiper (*Migratory*)	✓	✓
Red Knot (*Vulnerable, migratory*)	✓	✓
Red-tailed Tropicbird (*Migratory*)	✓	✓
Roseate Tern (*Migratory*)		✓
Sharp-tailed Sandpiper (*Vulnerable, migratory*)	✓	✓
Shy Albatross (*Endangered, migratory*)		✓
Soft-plumaged Petrel (*Vulnerable*)		✓
Southern Giant-Petrel (*Endangered, migratory*)	✓	✓
Streaked Shearwater (*Migratory*)	✓	✓
Wedge-tailed Shearwater (*Migratory*)		✓
White-capped Albatross (*Vulnerable, migratory*)		✓
White-tailed Tropicbird (*Migratory*)	✓	✓

Table 4-15: Presence of BIAs for seabirds and shorebirds (Ref. 148)

Common name	BIA behaviour	Seasonal presence	OA	EMBA
Fairy Tern	Breeding on northern Ningaloo coast and Pilbara islands including Barrow Island, Montebello Islands and Thevenard Island.	July to late-September		✓
Lesser Crested Tern	Breeding on Pilbara islands including Barrow Island, Thevenard Island and Montebello Islands	March to June	✓	✓
Roseate Tern	Breeding on Pilbara islands and coastline and Ningaloo coast	Mid-March to July		✓
Wedge-tailed Shearwater	Breeding along Pilbara coastline and islands	Mid-August to April (Pilbara)	✓	✓

4.3.3.4.1 Wedge-tailed Shearwater

Behaviours used to define BIAs for seabirds in Commonwealth marine areas include breeding with a foraging buffer, and roosting (Ref. 130). The BIAs for this species are buffers around islands that this species is known to nest on (Figure 4-27) which intersect the OA. Bird species may forage in the waters surrounding the islands during nesting seasons. The Wedge-tailed Shearwater 'foraging in high numbers BIA' is much further south near Carnarvon and does not intersect the EMBA.

Wedge-tailed Shearwaters are a pelagic, migratory visitor to WA; estimates indicate more than one million shearwaters migrate to the Pilbara islands each year (Ref. 143); out of an estimated global population of five million (Ref. 184). The Wedge-tailed Shearwaters typically begin arriving at their WA colonies around August each year and will excavate burrows on vegetated islands for nesting; peak

egg laying typically occurs during November; and they will typically leave nests in early-April to early-May and travel north to the Indian Ocean (Ref. 324; Ref. 47). Migration from the colony is very synchronous, but the return is less so (Ref. 47). The departure (early-April to early-May) of Wedge-tailed Shearwaters from WA may overlap with the timing of the activity. Once adults cease returning to feed their young, the young (fledgling) Wedge-tailed Shearwaters fledge and depart nests (Ref. 441; Ref. 442).

Known breeding locations in the NWMR include Forestier Island (Sable Island), Bedout Island, Dampier Archipelago, Passage Island, Lowendal Island, islands off Barrow Island (Mushroom, Double and Boodie islands), islands in the Onslow area (including Airlie, Bessieres, Serrurier, North and South Muiron and Locker islands), islands in Freycinet Estuary, and south Shark Bay (Slope, Friday, Lefebre, Charlie, Freycinet, Double and Baudin islands) (Ref. 184).

This species forages relatively close to breeding islands and its diet is mostly squid, fish, and crustaceans (Ref. 184). However, more recent studies have indicated bimodal foraging. A study on foraging behaviour of the Wedge-tailed Shearwaters during the 2018 nesting season on the Muiron Islands showed a bimodal foraging strategy that incorporated both short (<4 days) and long (>7 days) trips (Ref. 273). The foraging trips of the Wedge-tailed Shearwaters from the Muiron Islands were recorded over a large area, extending from the Cape Range Canyon to the Indonesian Archipelago; and a consistent pattern of foraging near seamounts was observed (Ref. 47). Note: This same area is part of the foraging extent used by the Wedge-tailed Shearwaters from both Pelsaert and Houtman Abrolhos islands) (Ref. 441; Ref. 47). The use of a bimodal foraging strategy suggests that prey availability close to the colony (i.e. areas that would be used on short trips) are inadequate for the large numbers of breeding shearwaters (Ref. 47).

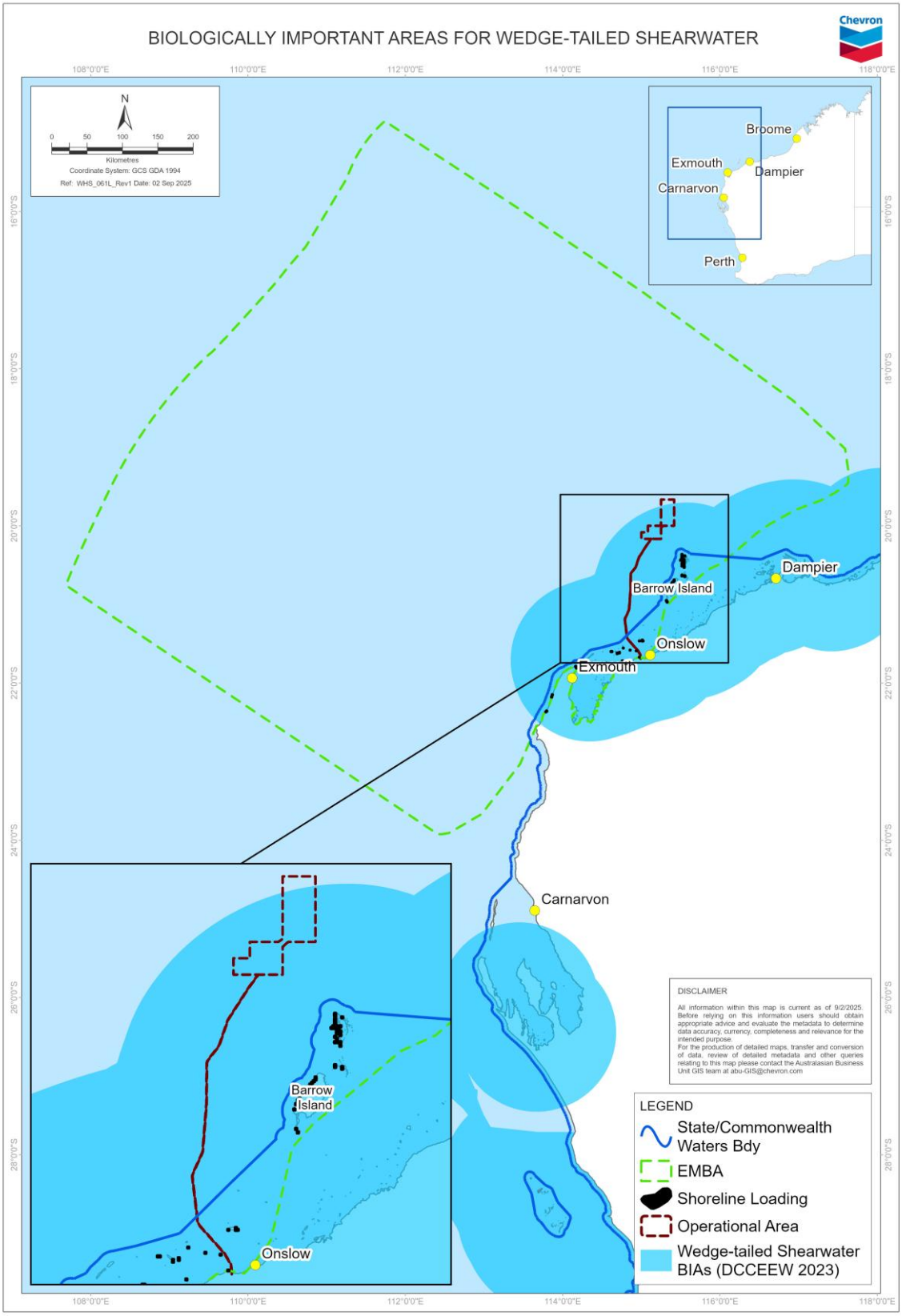


Figure 4-27: BIA for Wedge-tailed Shearwater

4.3.3.4.2 Lesser Crested Tern

The lesser crested tern (*Thalasseus bengalensis* formerly known as *Sterna bengalensis*), inhabits tropical and subtropical sandy and coral coasts and estuaries. It breeds on low-lying offshore islands, coral flats, sandbanks, and flat sandy beaches, and forages in the surf and over offshore waters (Ref. 266).

Since 1996, this species has nested regularly at the Lowendal Islands, where up to 200 pairs nest among larger colonies of crested terns (Ref. 184). Additional nesting sites within state waters adjacent to the NWMR include Sterna Island in the Kimberley, Bedout Island in the Pilbara, and potentially the Montebello Islands (Ref. 184). Breeding records also exist for Ashmore Reef, various Kimberley islands (including Low Rocks and Adele Island), and islands extending south to Shark Bay (Ref. 184; Ref. 247).

During the breeding season, lesser crested terns prefer to nest in colonies on bare sand or shingle, where they are protected from terrestrial predators. Outside the breeding season, they roost on coastal rocks and sandbars (Ref. 313).

The species feeds by plunging or dipping from the air to catch prey in shallow waters, primarily targeting pelagic fish and shrimps (Ref. 130; Ref. 177). Lesser crested terns are highly social, particularly during the breeding season, when they form colonies that often include other seabird species (Ref. 266).

Breeding BIAs for this species have been identified in the north-west coast of WA extending along the coast to the NT. BIAs associated with breeding on Thevenard and surrounding Pilbara islands intersect the OA (trunkline) and also surround Barrow Island and the Montebello Islands within the EMBA (Figure 4-28). Lesser Crested Terns forage in the waters surrounding these nesting sites during the breeding season from March to June (Ref. 148).

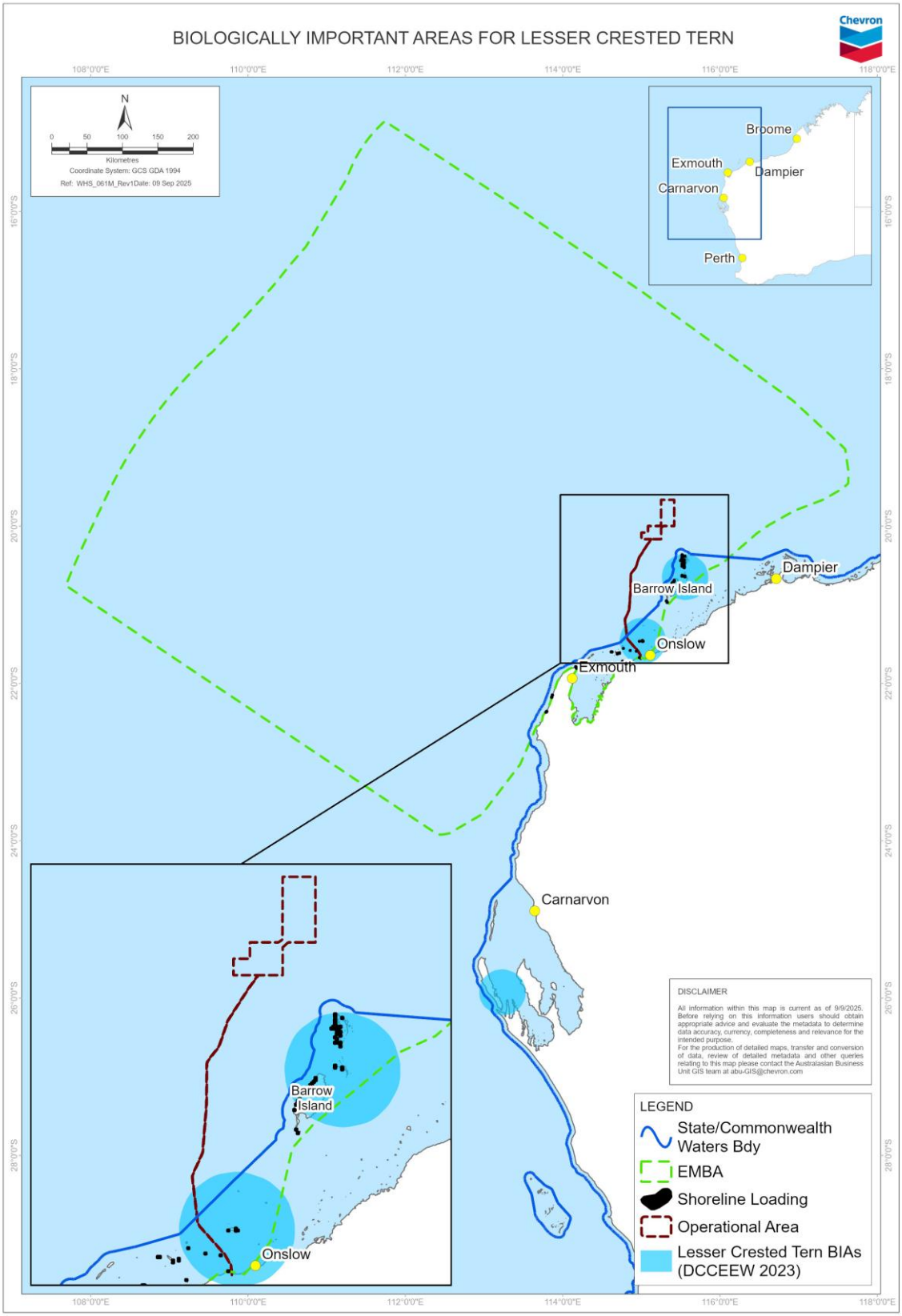


Figure 4-28: BIAs for Lesser Crested Tern

4.3.3.5 Summary of marine fauna seasonal sensitivities

Periods of the year coinciding with key biologically important behaviours for EPBC Act listed threatened and/or migratory species that may potentially be present within the OA are presented in Table 4-16.

Table 4-16: Summary of marine fauna with BIAs and associated periods of the year when activity occurs

Activity / Species	January	February	March	April	May	June	July	August	September	October	November	December
Marine fauna with biologically important behaviour												
Humpback Whale migration[1]												
Pygmy Blue Whale northern migration[2]												
Pygmy Blue Whale southern migration[2]												
Whale Shark migration and foraging[3]												
Flatback Turtle nesting and internesting[4]												
Hawksbill Turtle nesting and internesting[5]												
Lesser Crested Tern breeding[6]												
Wedge-tailed Shearwater breeding[7]												
	Species may be present and display biologically important behaviour in the region											
	Predicted peak period											

- *Humpback Whale migration along WA coast typically occurs between May (first sightings in southern WA waters) and November (Ref. 414). Predicted peak migration periods for the Montebello Islands region are late-July (northern migration) and early-September (southern migration) (Ref. 295).*
- *Pygmy Blue Whales migrate north along the WA coast between February (enter Perth Canyon) and August (Ref. 248; Ref. 331), with predicted highest densities in the Montebello Island region during May and June (Ref. 446). Pygmy Blue Whales migrate south between November and January (Ref. 248; Ref. 331), with predicted highest densities in the Montebello Island region during November and December (Ref. 446).*
- *Migration occurs mainly between July and November along the 200 m isobath (Ref. 454). A foraging BIA for Whale Sharks is associated with the area around this isobath.*
- *Seasonal presence within nesting and internesting HCTS of Flatback Turtles in the Pilbara (including Barrow and Montebello islands) is predicted to occur between October and March (Ref. 129), with peak nesting activity on Barrow Island predicted between November and January (Ref. 72).*

- *Seasonal presence within nesting and internesting HCTS of Hawksbill Turtles in WA (including Montebello and Lowendal islands) is predicted to occur between October and February (Ref. 129), with peak nesting activity on Barrow Island predicted in October (Ref. 72).*
- *Lesser Crested Terns breed in the Pilbara region from March to June (Ref. 148; Ref. 142).*
- *Wedge-tailed Shearwaters breed in the Pilbara region from November to April (Ref. 142); peak egg laying typically occurs during November (Ref. 266; Ref.47).*

4.3.4 Marine environmental quality

The term 'environmental quality' refers to the level of contaminants, or changes to the physical or chemical properties relative to a natural state (Ref. 225).

4.3.4.1 Water quality

Marine water quality within the EMBA is expected to be representative of high-water quality found in offshore waters.

The NWS is characterized by a relatively clear water column; however, these waters sometimes have naturally higher levels of turbidity as a result of local current, tidal or wave induced resuspension of fine sediments and seasonal fluvial inputs (Ref. 58).

Previous water quality data indicated that the coastal waters of the NWS (based on sampling from around the Dampier Archipelago) generally have very low levels of anthropogenic contamination (Ref. 479). The Wenziker et al. (Ref. 479) study found no detectable levels of the sampled organics chemicals, and metals were below ANZG in the waters of the Dampier Archipelago. However, natural oil seeps are known to occur on the NWS (Ref. 58). While this study is based on sampling outside the EMBA, it is expected that these low levels of contamination would continue into the offshore region (unless within the immediate vicinity of an offshore point source).

4.3.4.2 Sediment quality

Marine sediment quality within the EMBA is expected to be representative of typically pristine air quality found in offshore areas, away from industrialisation of point sources. Previous sediment quality data for Pilbara coastal waters (Ref. 174) indicated no detectable hydrocarbons, and with metal concentrations typically below the relevant Interim Sediment Quality Guideline-low guidelines. While this study is based on sampling outside the EMBA, it is expected that these low levels of contamination would continue into the offshore region (unless within the immediate vicinity of an offshore point source).

4.3.4.3 Air quality

Air quality within the EMBA is expected to be representative of typically pristine and high quality found in offshore areas.

CSIRO's Pilbara regional air quality study indicated that ambient atmospheric concentrations of CO, O_3, SO_2, $PM_{2.5}$, and NO_2 (as measured at the Dampier/Karratha and Boodarie regional industrial areas) were very low and well below National Environment Protection Measure (NEPM) for Ambient Air Quality standards (Ref. 58; Ref. 395). While this study is based on sampling outside the EMBA, it is expected that these low levels of contamination would continue into the offshore region (unless within the immediate vicinity of an offshore point source).

4.3.5 Onshore habitats

The small section of the onshore OA is pre-disturbed (Figure 2-2) as part of an industrial site. The industrial site is the already disturbed area (from previous phases of the Project) and provides little local ecological value. No threatened ecological communities coincide with the onshore area (Ref. 57).

The Interim Biogeographic Regionalisation for Australia (IBRA) categorises the Australian continent into regions of similar geology, landform, vegetation, fauna and climate, referred to as bioregions. Ashburton North is located at the junction between two Interim bioregions: the Carnarvon and Pilbara bioregions, with the majority of Project infrastructure located within the north-eastern corner of the Carnarvon bioregion. The sub-Carnarvon region is distinguished by quaternary coastal beach dunes and mud flats. These tidal mudflats support extensive mangroves, beach dunes with spinifex communities and an extensive mosaic of alluvial plains with samphire and saltbush low shrub-lands. Most of the area is comprised of a sandy surface covered with grasses and low bushes (Coastal Ridge and Longitudinal Dune System).

An assessment of potential acid sulphate soils (PASS) undertaken as part the *Draft Environmental Impact Statement / Environmental Review and Management Proposed Wheatstone Project* (Ref. 57) indicated that a moderate to high risk of the presence of PASS typically occurred at or below the water table. In an undisturbed state, any PASS are benign and do not pose a risk to the environment; it is the disturbance and subsequent exposure to water and oxygen that can lead to acidic conditions.

Environmental groundwater heads indicate water table mounding beneath the dunes and discharge towards the ocean with widely variable salinity, ranging from brackish, saline, to hypersaline.

4.3.5.1 Vegetation

Vegetation units that are in proximity to the onshore OA of PL99 include CD1 and CD2 (Coastal Sand Dunes habitat type) and CS1/CS2 (Coastal Sand Plains habitat) (Ref. 38). These vegetation units are described as being of low local significance as they do not support threatened flora, priority flora or other flora species of interest (Ref. 38). These vegetation units are representative of the vegetation in the locality and are moderately to substantially degraded by the invasion of buffel grass (*Cenchrus ciliaris*).

One vegetation unit, CP1 (Clayey Plains habitat type), is described as being of Moderate conservation value, being generally in very good condition and supporting a suite of species specific to this substratum. An additional vegetation unit, ID1 (Inland Sand Dunes habitat type) is considered to be of High local conservation significance as it potentially supports Priority Flora (*Eremophila forrestii* subsp. *viridis* and *Triumfetta echinata*), species of interest (*Aenictophyton aff. reconditum*), and the dune features would also be particularly susceptible to erosion and weed invasion following disturbance to the soil profile. However, only one flora taxa of conservation interest has been recorded in proximity to the PL99 licence area. *Abutilon* sp. is an undescribed taxa, which has been recorded from multiple locations within the wider Wheatstone EIS/ERMP vegetation and flora survey area.

Mangroves are of conservation significance. This vegetation unit is discussed further in appendix d of the OSMP (Ref. 101) as part of the shoreline habitats description.

An ecological community is a naturally occurring group of plants, animals and other organisms interacting in a unique habitat. The Minister for Environment may list an ecological community as being threatened (threatened ecological communities [TECs]) if the community is presumed to be totally destroyed or at risk of becoming totally destroyed. Ecological communities with insufficient information available to be considered a TEC, or which are rare but not currently threatened, are placed on the priority list and referred to as priority ecological communities (PECs). No TECs or PECs are located within the OA at Ashburton North. Additionally, no ecological communities listed under the EPBC Act are known to occur within this area.

4.3.5.2 Fauna

4.3.5.2.1 Vertebrate Fauna Species

Extensive surveys of terrestrial fauna have been conducted in the vicinity of the Project area, and ten broad fauna habitats were identified (Ref. 38). These habitats were distinguished on the basis of differences in substrate, vegetation, soils and landform. The Wheatstone LNG Fauna Study identified 128 vertebrate species, comprising 51 herpetofauna, 60 avifauna and 17 mammals (Ref. 38). The following six threatened (Schedule 1) vertebrate fauna species (or signs of these species) were recorded:

- Little Northern Freetail Bat (*Mormopterus loriae cobourgensis* [Priority 1])
- Australian Bustard (*Ardeotis australis* [Priority 4])
- Western Pebble-mound Mouse (*Pseudomys chapmani* [Priority 4])
- Rainbow Bee-eater (*Merops ornatus* [Migratory])
- Fork-tailed Swift (*Apus pacificus* [Migratory])
- White-bellied Sea Eagle (*Haliaeetus leucogaster* [Migratory]).

These species are well represented in the wider area. It was concluded that the OA and surrounds does not support significant numbers of migratory waterbirds and studies have also demonstrated that the locality is not an important habitat for migratory bird species (Ref. 57).

Recent PMST reports (Ref. 166) indicate that threatened and/or migratory fauna species have distributions that intersect terrestrial areas within the OA and EMBA and have the potential to be impacted. Table 4-17 defines these species.

Additional threatened/migratory species were identified within the PMST reports but have not been outlined in Table 4-17. These species are terrestrial in nature, are not present within the onshore OA and have no interaction with the marine environment. Activities under this EP would not have an impact on these species and they have been excluded from further discussion.

Table 4-17: Threatened and migratory terrestrial species within the OA and EMBA with the potential to be impacted by activities

Common name	OA	EMBA
Mammals		
Ghost Bat (*Vulnerable*)	✓	
Northern Quoll (*Endangered*)	✓	
Birds		
Red Goshawk (*Endangered*)	✓	✓

Common name	OA	EMBA
Night Parrot (*Endangered*)	✓	
Grey Falcon (*Vulnerable*)	✓	✓
Fork-tailed Swift (*Migratory*)	✓	✓
Grey Wagtail (*Migratory*)	✓	
Yellow Wagtail (*Migratory*)	✓	
Barn Swallow (*Migratory*)	✓	
Subterranean		
Barrow Cave Gudgeon (*Endangered*)		✓
Cape Range Cave Gudgeon (*Vulnerable*)		✓
Blind Cave Eel (*Vulnerable*)		✓

4.3.5.2.2 Short Range Endemics

Despite thorough searching surveys of suitable habitat for invertebrate groups considered to support short-range endemic taxa, none were identified within the Ashburton North locality (Ref. 57).

4.3.5.2.3 Subterranean Fauna

A subterranean fauna study was conducted for the Wheatstone Project with sampling conducted in June, July, September, and October 2009 (Ref. 57). A desktop assessment of the likelihood of subterranean fauna being found within the plant site and within the shared infrastructure corridor was conducted.

No troglobitic fauna were recovered from any of the 96 traps within the 18 bore holes that were sampled. The desktop assessment concluded that there is a low likelihood that the survey area would support a significant troglobitic community as the landforms, stratigraphy and the small amount of habitat space available between the ground surface and the water table are not conducive to troglobitic fauna (Ref. 57). The survey results suggest that a diverse or significant stygal community does not occur in the aquifers beneath the survey area (Ref. 57).

As outlined in Table 4-17, PMST reports (Ref. 166) indicate that three threatened subterranean fishes have distributions that intersect the EMBA but not the OA – Barrow Cave Gudgeon (*Milyeringa justitia*), Cape Range Cave Gudgeon (*M. veritas*) and Blind Cave Eel (*Ophisternon candidum*). Seawater incursion to the subterranean environment which these species inhabit poses a risk in the event of a hydrocarbon spill.

4.3.6 People and communities

People and communities, and specifically their social, economic, and cultural features, are included within the definition of environment within the OPGGS(E)R. People and communities have been identified and described to the extent that they directly affected, or are affected by, the existing physical and biological environments.

The NWMR supports a range of economic, social, and cultural activities. At present, industries within the NWMR include petroleum exploration and production, commercial and recreational fishing, tourism, ports and shipping (Ref. 216). These uses of the NWMR make an important economic and social contribution to

settlements along the coast (Ref. 216). Industry activities present with the EMBA are identified and described in Section 4.4.

4.3.6.1 Land use

Coastline interaction within the OA occurs only at the mainland where the trunkline proceeds onshore. The EMBA interfaces with coastline along the Cape Range peninsula, the Exmouth Gulf and Onslow. Island coastlines within the EMBA include the Montebello Islands, Barrow Island and Pilbara inshore islands.

The land uses that may be present within the EMBA are summarised below.

The Montebello Islands are designated as a State Conservation Park (IUCN II) (Section 4.5.3) and are surrounded by the State Montebello Islands Marine Park (IUCN II) and Commonwealth Montebello Marine Park (Sections 4.5.1 and 4.5.2). The Conservation Park is gazetted to the high water mark (HWM). Given the natural values of the islands and surrounding waters, recreational activities may occur. Shore-based fishing, beach walks, picnics and wildlife viewing are types of activities that may occur (Ref. 144). Camping is permitted on some of the islands (with some restrictions during turtle nesting season) (Ref. 144).

Barrow, Double, Middle, and Boodie islands are protected under WA jurisdiction; the islands are Nature Reserves (IUCN Ia) (Section 4.5.3), and are surrounded by the Barrow Island Marine Park (IUCN Ia) and Barrow Island Marine Management Area (IUCN VI) (Section 4.5.2). The Nature Reserves are gazetted to the low water mark (LWM). Access to Barrow, Double, Middle, and Boodie Islands is not encouraged due to numerous natural and artificial hazards, including the operation of an oilfield and the Gorgon Gas Project (Ref. 243). Camping is not permitted on any of these islands (Ref. 243).

The Pilbara Inshore Islands comprise >170 islands, islets, rocks and cays extending from the bottom of Exmouth Gulf to the Regnard Islands near Cape Preston (Ref. 144). Some of the islands that occur within the EMBA are classified as Nature Reserves (IUCN IA) (Section 4.5.3). Three of the Nature Reserves (Great Sandy Island Nature Reserve, Thevenard Island Nature Reserve, North Sandy Island Nature Reserve) are gazetted to the low water mark and hence intertidal areas are often found within the nature reserve boundaries. The Pilbara Inshore Islands Nature Reserves are known as important breeding and resting places for migratory and resident shorebirds, seabirds and marine turtles (Ref. 144). Fishing, beach walks and wildlife viewing are types of activities that may occur in the Pilbara Inshore Islands Nature Reserves (Ref. 144). Camping is only permitted on certain islands and may require a permit (Ref. 144).

4.3.6.2 Heritage

Heritage includes places, values, traditions, events, and experiences that capture where we have come from, where we are now, and gives context to where we are headed as a community (Ref. 158).

Where known heritage sites and/or artefacts are formally protected under specific heritage legislations, these are described within Section 4.6. The following sections summarise other known heritage values identified within the EMBA.

4.3.6.2.1 First Nations cultural values, activities, connections, and obligations

First Nations people have an ongoing cultural and spiritual connection to the Sea Country and islands within the EMBA, and the adjacent land areas, which includes

an obligation to protect cultural values and features such as songlines, dreaming stories, and flora and fauna connected to them.

For First Nations People, every aspect of the land, sea and sky is infused with meaning and life, from the waterways that snake across the country to the rocks that rise up to meet the sky. The concept of 'Country' is holistic, encompassing all elements of the environment, and is central to their identity and sense of belonging. This deep connection is reflected in their languages, ceremonies, and customs, which are all rooted in the land, providing a sense of continuity and connection to their ancestral heritage. Which brings with it, personal, cultural and spiritual obligations and responsibilities, such as an obligation to protect cultural heritage values, which is integral for their existence and wellbeing.

Cultural heritage values are not only comprised of tangible (archaeological) values; it also includes intangible (anthropological) values. Tangible values are those with physical aspects of Aboriginal cultural heritage that are visible, touchable and measurable (such as stone artefacts, shelters, middens and art). While intangible values refer to the non-physical aspects of Aboriginal cultural heritage that are transmitted, shared and expressed through language, stories, ceremonies, rituals and practices (such as songlines, sacred sites, and kinship).

Sea country is a concept that encompasses the marine environments, coastal areas, and the cultural landscapes that are deeply connected to Aboriginal peoples. Like the concept of ‘Country’, Sea Country is not just a source of food and resources but a living entity that holds stories, spirits, songlines and ancestral connections.

Songlines are paths that track across Country and skies, representing First Nations knowledge, linking people, places, and practices (Ref. 10). They are not only a means of cultural expression but also serve as a guide for navigating and understanding the natural world, woven into song, dance, and memory. These songlines are the living tools that embed and mediate history, ecological knowledge, relationships, ancestral beings, and cultural belonging on Country (Ref. 292), guiding not just movement, but culture, lore, and identity. Kearney et al. (Ref. 301) describe that for saltwater peoples “stories and songlines locate, interpret and inscribe knowledges of both the Dreaming tracks, bodies and movements of ancestral beings that criss-cross over Sea Country and the permanent sites of ancestral inhabitation within the marine environment”. Songlines rely on the continued health of Country, and people’s continued access and connection to it (Ref. 127). When Country is damaged or altered, so too are songlines and the knowledge they embody and enact (Ref. 292).

Nunn and Reid (Ref. 376) discuss how First Nations oral traditions have documented sea level rise over the last 7,000 years. Kearney et al. (Ref. 301) also discusses how seabed mapping near Murujuga (Burrup Peninsula) identified two submerged waterholes that were identified by local senior elders as belonging to the Kangaroo songline. A songline from the mainland to Barrow Island has been referenced during studies involving Thalanyji knowledge holders (Ref. 506). Underwater cultural heritage (UCH), including First Nations UCH, as protected under the UCH Act is discussed further in Section 4.6.2.

First Nations people have a profound understanding of the marine ecosystems, developed over thousands of years through observation and interaction which is, is not merely scientific but deeply intertwined with their cultural practices and beliefs. This knowledge includes seasonal patterns, breeding cycles of marine life, and the sustainable harvesting of resources. This holistic understanding allows them to manage and utilise marine resources in a way that ensures sustainability and respects the natural balance. Supporting First Nations people to engage in a diverse

range of marine resource use activities that are sustainable and support to provide for their families and communities (such as hunting, egg collecting, fishing and gathering shellfish).

This deep spiritual connection to marine life is also reflected in their customs, beliefs and traditions as some marine species hold totemic and kinship significance, and are woven into Dreaming, songlines and stories. For example, some First Nations people have a strong connection to whales, which has significance as totemic ancestors to some groups (Ref. 153). The arrival of whales along Australia's coast marked the arrival of the "elders of the sea", which follows a songline that traces the journeys of ancestral spirits as they created the land, animals, and lore (Ref. 153).

First Nations people in northwest WA continue to rely on coastal and marine environments and resources of the region for their cultural identity, health and wellbeing, and their domestic and commercial economies (Ref. 433). For coastal First Nations people, it also remained a vital part of their lore and governance, as they have responsibilities as the Traditional Custodians to care for and protect their Sea Country to ensure that it remains healthy and productive for future generations. This stewardship is often guided by principles of reciprocity and respect, where the well-being of the sea is directly linked to the well-being of the people. Their commitment to protecting their Sea Country is demonstrated through their native title claims and their many initiatives to regain their role as managers of the cultural and natural values of northwest WA (Ref. 433).

Based on engagement with First Nations groups, CAPL understands that Thalanyji, Nhuwala, Mardathoonera, Yaburara, and Baiyungu people have connections to the Sea Country and/or islands within the EMBA, and adjacent land areas. Previous consultation with these groups, has confirmed that Sea Country is a significant cultural value which comes with cultural obligations. These Sea Country values include coastal and marine areas, offshore islands, marine fauna, and traditional stories (Table 4-18).

Table 4-18: Cultural values or features identified through consultation

Source	Cultural value or feature
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	The Thalanyji people have a deep connection to Sea Country north of Onslow, extending out into the islands off the coast of the Pilbara including: • Montebello Islands • Barrow Island • Mackerel Islands • Direction Island • Airlie Island • Weld Island • North and South Islands • Ashburton Island • Twin Islands • any island or atoll proximate to the above islands • a general radius of 150 km from Onslow
Mardathoonera Cultural Heritage Pty Ltd (MCH)	Cultural heritage values and features identified through consultation were requested to be treated as confidential. As such, heritage values and features identified by MCH have been captured in the sensitive information report provided separately to NOPSEMA.

Source	Cultural value or feature
Nhuwala Applicants	• Sea Country is valuable to the Nhuwala people. They have connection to many islands off the coast of the Pilbara North of Onslow. • Identified a connection with Barrow Island^ and surrounding waters.
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	• NTGAC has noted the cultural importance of Sea Country and the need to ensure it is protected. • In addition CAPL understands the Ningaloo Coast is culturally significant to the groups NTGAC represents. • NTGAC have expressed a general interest in whales and whale sharks.
Wirrawandi Aboriginal Corporation (WAC)	• The coastal area, Sea Country, and adjacent islands, that extend 120-150km from the mouth of the Fortescue River, are highly valuable to the Mardathoonera people • Identified a connection to Barrow Island

4.3.6.2.2 Historic heritage

Early European exploration of the NWMR and adjacent coast occurred in the 1600s; however it was concluded at the time that resources and conditions were not appropriate for settlement (Ref. 216). British colonisation did not begin in the Pilbara until 1860s, with pastoralism as the first major industry, followed by small ports and service centres (Ref. 216). The pearling industry began in the late-1800s and remains a significant contributor to the economy of northwest WA (Ref. 216). Similarly, small fishing fleets were common from the 1860s onwards, and the commercial fishing industry also remains a significant economic input for northwest WA, particularly from prawn and demersal finfish fisheries (Ref. 216). Petroleum discovery and development commenced from the 1950s, with both onshore and offshore discoveries (Ref. 216).

The marine and coastal industries that still exist and operate within the NWMR are further described in Section 4.4.

4.3.7 Commonwealth marine areas

The Commonwealth marine area is a MNES under the EPBC Act, and a relevant value and sensitivity under the OPGGS(E)R. The EMBA for this activity intersects within Commonwealth waters that are part of the NWMR.

The NWMR comprises the Commonwealth waters and seabed from the WA—Northern Territory border south to Kalbarri (Ref. 216). The NWMR is characterised by shallow-water tropical marine ecosystems with high species richness. Most of the region's species are tropical and are also found in other parts of the Indian and western Pacific oceans (Ref. 216). The region 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 (Ref. 262). The region 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 (Ref. 216).

Conservation values of the Commonwealth marine area include:

- protected species and/or their habitat (Section 4.3.3)
- protected places including Australian Marine Parks (AMP) (Section 4.5.1) and heritage places (Section 4.6)

- KEFs (Section 4.3.7.1).

4.3.7.1 Key ecological features

KEFs are elements of the Commonwealth marine environment that are considered to be of regional importance for a region's biodiversity or its ecosystem function and integrity. KEFs are not MNES and have no legal status in their own right; however, they may be considered as components of the Commonwealth marine area.

KEFs meet one or more of these criteria (Ref. 168):

- a species, group of species, or a community with a regionally important ecological role (e.g. a predator, or prey that affects a large biomass or number of other marine species)
- a species, group of species, or a community that is nationally or regionally important for biodiversity
- an area or habitat that is nationally or regionally important for:
  - enhanced or high productivity (such as predictable upwellings—an upwelling occurs when cold nutrient-rich waters from the bottom of the ocean rise to the surface)
  - aggregations of marine life (such as feeding, resting, breeding or nursery areas)
  - biodiversity and endemism (species that only occur in a specific area)
- a unique sea floor feature, with known or presumed ecological properties of regional significance.

KEFs have been identified by the Australian Government on the basis of advice from scientists about the ecological processes and characteristics of the area (Ref. 168).

The presence of KEFs within the EMBA, and a description of the KEFs values, are shown in Figure 4-29 and described in Table 4-19.

Table 4-19: Presence of KEFs

Key ecological feature	OA	EMBA
Ancient coastline at 125 m depth contour	✓	✓
Parts of the ancient coastline, particularly where it exists as a rocky escarpment, are thought to provide biologically important habitats in areas otherwise dominated by soft sediments. The topographic complexity of these escarpments may also facilitate vertical mixing of the water column, providing relatively nutrient-rich local environments (Ref. 216). The ancient submerged coastline 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. Little is known about fauna associated with the hard substrate of the escarpment but it is likely to include sponges, corals, crinoids, molluscs, echinoderms and other benthic invertebrates representative of hard substrate fauna in the NWS bioregion (Ref. 216). **Values:** Unique sea floor feature with ecological properties of regional significance.		
Continental slope demersal fish communities	✓	✓
The diversity of demersal fish assemblages on the continental slope in the Timor Province, the Northwest Transition and the Northwest Province is high compared to elsewhere along the continental slope. 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 (Ref. 314).		

Key ecological feature	OA	EMBA
The demersal fish species occupy two distinct demersal community types associated with the upper slope (water depth of 225–500 m) and the mid slope (750–1,000 m). Bacteria and fauna present on the continental slope are the basis of the food web for demersal fish and higher-order consumers in this system (Ref. 216). **Values**: High levels of endemism.		
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula		✓
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. Aggregations of whale sharks, manta rays, sea snakes, sharks, large predatory fish and seabirds are known to occur in this area (Ref.216). The canyons on the slope of the Cuvier Abyssal Plain and Cape Range Peninsula are connected to the Commonwealth waters adjacent to Ningaloo Reef and may also have connections to Exmouth Plateau. The narrow shelf width (about 10 km) near the canyons facilitates nutrient upwelling. Thus, the canyons probably play a part in the enhanced productivity of the Ningaloo Reef system (Ref. 216). The canyons are also repositories for organic and inorganic particulate matter from the shelf and serve as conduits for its transfer from the surface and shelf to greater depths. The hard substrates of canyons provide habitat for deepwater snapper and other species (Ref. 42). **Values:** Unique sea floor features with ecological properties of regional significance.		
Commonwealth waters adjacent to Ningaloo Reef		✓
The Commonwealth waters adjacent to Ningaloo reef include Ningaloo Marine Park (Commonwealth waters) and encompass an area of 2,435 km^2. This feature lies adjacent to the Ningaloo Reef state water margin at the 3 nm limit. Ningaloo Reef is globally significant as the only extensive coral reef in the world that fringes the west coast of a continent. Upwellings associated with canyons on the adjacent slope and interactions between the Ningaloo and Leeuwin currents are thought to support the rich aggregations of large marine species present at Ningaloo Reef (Ref. 216). Aggregations of Whale Sharks, Manta Rays, Humpback Whales, sea snakes, sharks, large predatory fish and seabirds are known to occur in this area (Ref. 216). **Values:** High productivity and aggregations of marine life.		
Exmouth Plateau		✓
The Exmouth Plateau is a regionally and nationally unique deep-sea plateau (water depths of 800-4000 m) in tropical waters. The plateau is a very large topographic obstacle that may modify the flow of deep waters, generating internal tides and may contribute to upwelling of deeper water nutrients closer to the surface, thus serving an important ecological role (Ref.216). The topography of the plateau (with valleys and channels), in addition to potentially constituting a range of benthic environments, may provide conduits for moving sediment and other material from the plateau surface through the deeper slope to the abyss. The Exmouth Plateau is generally an area of low habitat heterogeneity; however, it is likely to be an important area of biodiversity as it provides an extended area offshore for communities adapted to depths of around 1000 m. Sediments on the plateau suggest that biological communities include scavengers, benthic filter feeders and epifauna (Ref. 216). Fauna in the pelagic waters above the plateau are likely to include small pelagic species and nekton (Ref. 314). **Values:** Unique sea floor feature with ecological properties of regional significance.		
Glomar Shoals		✓
The Glomar Shoals are regionally important for their high biological diversity and high localised productivity. The shoals are a submerged littoral feature located ~15 km north of Dampier on the Rowley shelf at water depths of 33–77 m. Situated within a high-energy environment that is subject to strong sea-floor current and frequent cyclone activity, the substrate features a large		

Key ecological feature	OA	EMBA
percentage of marine-derived sediments with high carbonate content and gravels of weathered coralline algae and shells (Ref. 216). Biological data specific to Glomar Shoals is limited; however, the fish of Glomar Shoals are likely a subset of reef-dependent species and anecdotal and fishing industry evidence suggest they are particularly abundant (Ref. 216). The shoals are known to be an important area for several commercial and recreational fish species including Rankin Cod, Brown-striped Snapper, Red Emperor, Crimson Snapper, bream and Yellow-spotted Triggerfish (Ref. 216). **Values:** High productivity and aggregations of marine life		

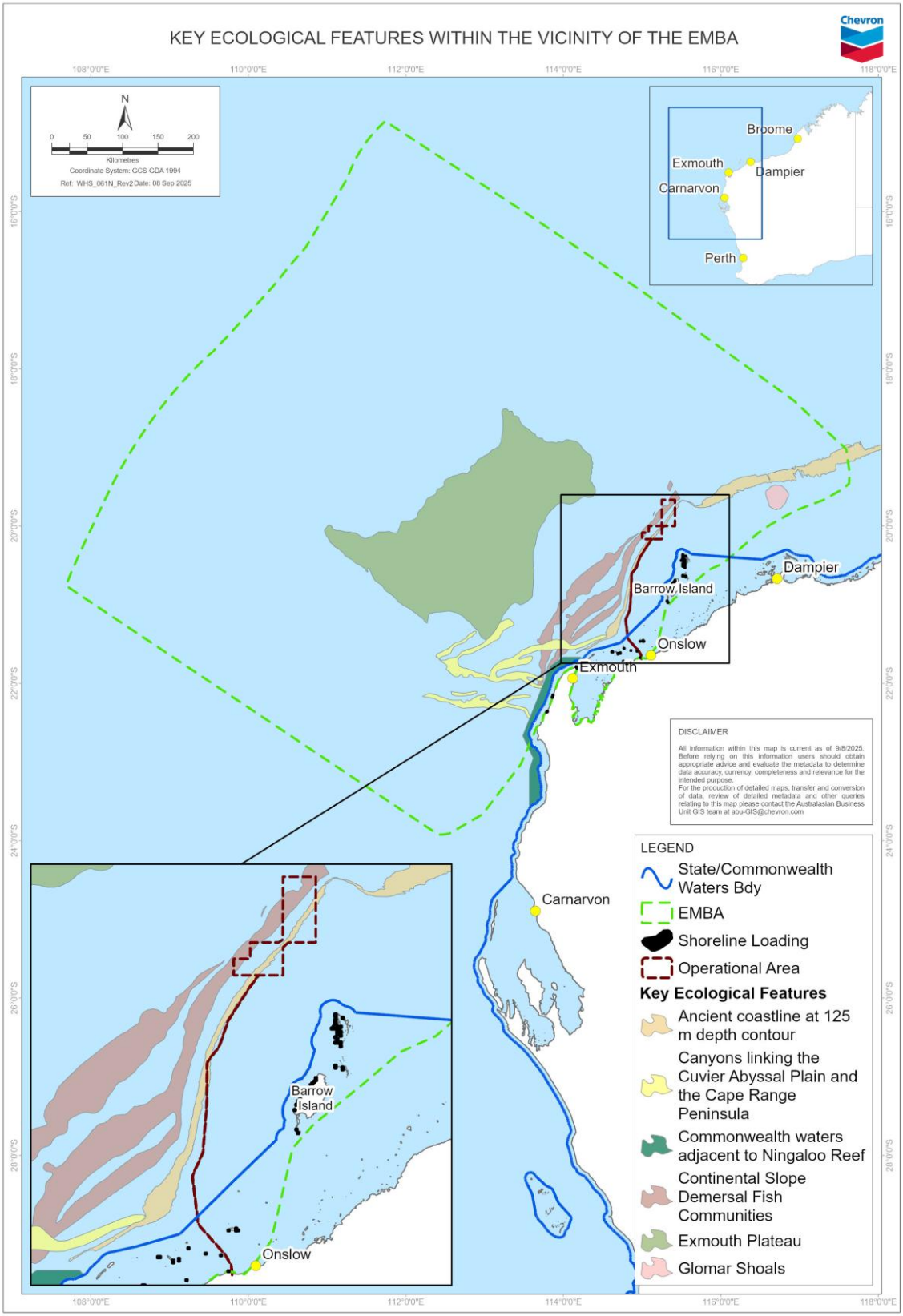


Figure 4-29: Key ecological features within the vicinity of the EMBA

4.3.8 Commonwealth land area

Commonwealth land[6] is a relevant value and sensitivity under the OPGGS(E)R. Based on spatial review and searches of the online PMST (Ref. 166; appendix e), there is Commonwealth land associated with Defence facilities that intersects with the EMBA. These facilities are further described in Section 4.4.6.

4.4 Natural and physical resources

Natural and physical resources are described as substances occurring in nature that can be exploited for economic gain, and may include such resources as fishing stocks, petroleum reservoirs, or values of the Commonwealth marine area. Marine and coastal industries have been developed based on natural and physical resources, and where these industries may interest with the EMBA they have been identified and described in the following sections.

4.4.1 Commercial fisheries

4.4.1.1 Commonwealth-managed fisheries

The Commonwealth-managed commercial fisheries with fishery management areas that intersect the EMBA, and that have fishing effort recorded during 2018–2023 (Ref. 2) are listed in Table 4-20.

Table 4-20: Presence of recent (2018-2023) fishing effort recorded within Commonwealth-managed commercial fisheries

Fishery	OA	EMBA
North-West Slope Trawl Fishery	✓	✓
Western Deepwater Trawl Fishery		✓

Commonwealth fisheries with fishing effort recorded within the OA are limited to the North West Slope Trawl Fishery (NWSTF), as shown in Figure 4-30. Relative fishing intensity data are not available for the NWSTF due to low vessel numbers and confidentiality.

The NWSTF use bottom (or demersal) trawl methods to target deep-water prawn and scampi typically between the 200 m isobath and the outer boundary of the Australian Fishing Zone (Ref. 45). The primary species landed in the NWSTF is the Australian scampi (*Metanephrops australiensis*), with smaller quantities of velvet scampi (*M. velutinus*) and Boschma's scampi (*M. boschmai*) and mixed scampi (*Metanephrops* spp. and *Nephropsis* spp.) (Ref. 45). A quantity of prawns is also harvested each season, and squids are becoming an increasingly significant component of the catch. Mixed snappers (Lutjanidae) and redspot emperor (*Lethrinus lentjan*) have historically been an important component of the NWSTF catch. Fishing for scampi occurs over soft, muddy sediments or sandy habitats, using demersal trawl gear on the continental slope.

Fishing efforts increased from 196 days, 3,950 trawl-hours and seven fishing permits in the 2021–22 season to 218 days, 4,349 trawl-hours with the same number of fishing permits in the 2022–23 season. Three vessels operated in the 2022–23 season (Ref. 45). Scampi stock are classified as not overfished and not subject to overfishing (Ref. 45).

[6] Commonwealth land includes land owned or leased by the Commonwealth or a Commonwealth agency, land in the Jervis Bay Territory, land in the Christmas Island, Ashmore and Cartier Islands, Coral Sea Islands, Cocos (Keeling) Islands, Australian Antarctic territory and Heard and McDonald Islands external territories, and any other area of land that is included in a Commonwealth reserve.

Southern bluefin tuna management area has been identified within the EMBA. The southern bluefin tuna Fishery is active within waters in the Great Australian Bight and south-eastern Australia (i.e. not within the OA or EMBA). A known spawning ground for southern bluefin tuna occurs in the Indian Ocean, between Java and northern WA (Ref. 45; Ref. 152). The indicative spawning ground for the southern bluefin tuna (based on geospatial data provided by Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), and as shown in annual Commonwealth fishery status reports) extends into the northern part of the OA and EMBA. Two peaks have been observed in southern bluefin tuna spawning activity: September–October and February–March (Ref. 228; Ref. 377). Spawning typically occurs near the water surface. The fish then regularly dive into deeper waters to thermoregulate as they are cold-water fish and cannot tolerate warm waters for extended periods (Ref. 377). Individual fish probably stay in the spawning area for one month or so (Ref. 230; Ref. 377). The larvae drift passively before becoming entrained in the southwards flowing South Java and Leeuwin Currents and carried down the coast of Western Australia (Ref. 377). One to two-year old juveniles then head east to the Great Australian Bight, or west to the waters off South Africa (Ref. 228).

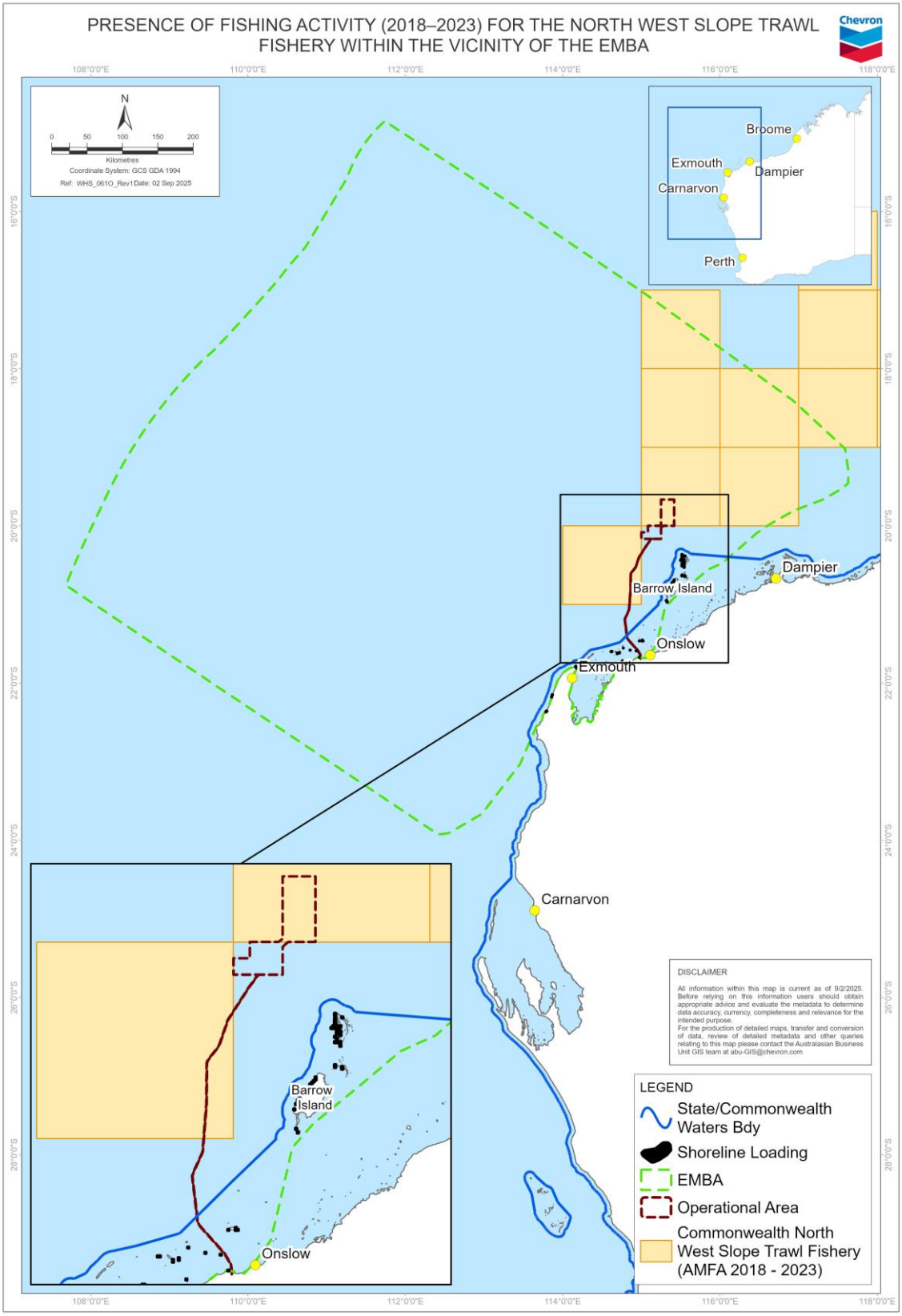


Figure 4-30: Presence of fishing activity (2018-2023) for the North West Slope Trawl Fishery within the vicinity of the OA

Source: Fisheries data were supplied by the Australian Bureau of Agricultural and Resource Economics and Sciences from data collected by the Australian Fisheries Management Authority. Where <5 vessels were operating data is available only in the form of a 'footprint' (i.e. total area of waters fished), and not as a relative fishing intensity.

4.4.1.2 State-managed fisheries

The State-managed commercial fisheries with fishery management areas that intersect the OA and/or EMBA, and that have fishing effort recorded over a 10-year period (2014–2023) (Ref. 2) are listed in Table 4-21. Based on the 60 NM fishing effort data sets, 12 fisheries were identified with activity within the vicinity of the OA; these are shown in Figure 4-31 to Figure 4-41.

Table 4-21: Presence of recent fishing effort recorded during 2014-2023 within State-managed commercial fisheries (using 60 NM fishing effort dataset)

Fishery	OA	EMBA
North Coast Bioregion		
Nickol Bay Prawn Managed Fishery	✓	✓
Onslow Prawn Managed Fishery	✓	✓
Pilbara Crab Managed Fishery	✓	✓
Pilbara Fish Trawl (Interim) Managed Fishery		✓
Pilbara Line Fishery	✓	✓
Pilbara Trap Managed Fishery	✓	✓
Gascoyne Bioregion		
Exmouth Gulf Prawn Managed Fishery	✓	✓
Exmouth Gulf Beach Seine and Mesh Net Managed Fishery		✓
Gascoyne Demersal Scalefish Fishery		✓
West Coast Deep Sea Crustacean Fishery	✓	✓
EMBA-wide		
Mackerel Managed Fishery	✓	✓
Marine Aquarium Fish Managed Fishery	✓	✓
Specimen Shell Managed Fishery	✓	✓
Hermit Crab Fishery	✓	✓
West Australian Sea Cucumber (Beche-De-Mer) Fishery	✓	✓

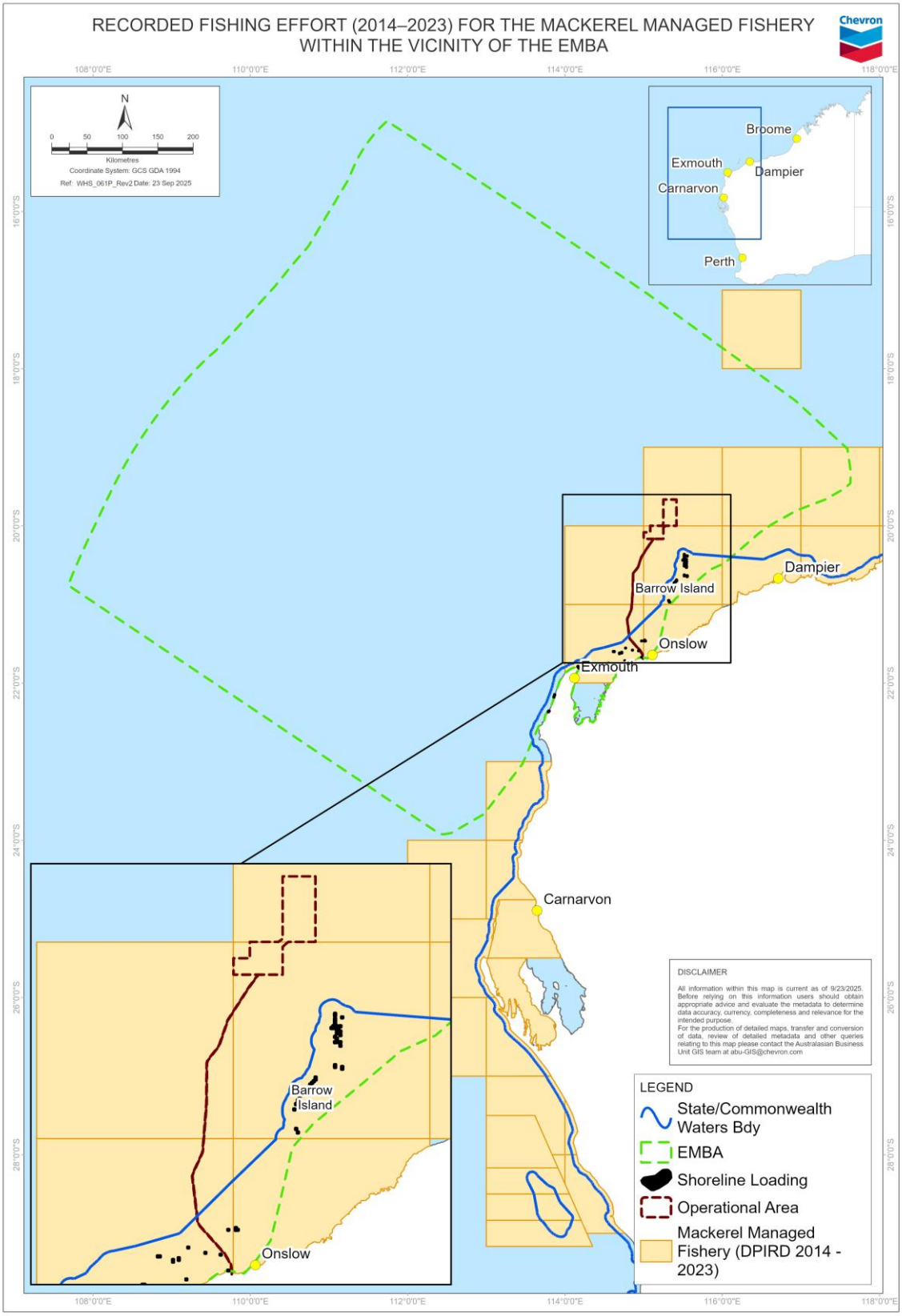


Figure 4-31: Recorded fishing effort for the Mackerel Managed Fishery within the vicinity of the OA

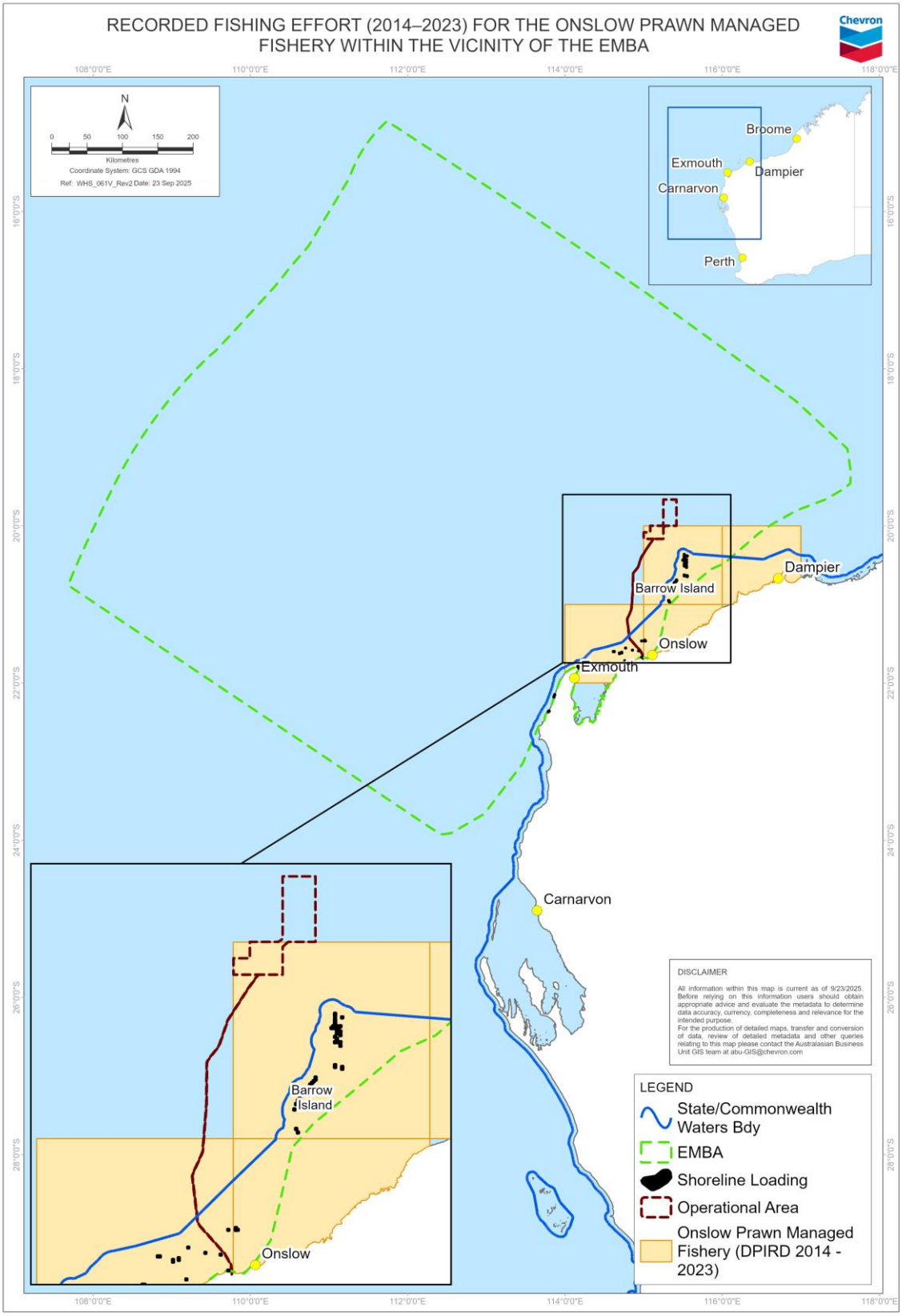


Figure 4-32: Recorded fishing effort for the Onslow Prawn Managed Fishery within the vicinity of the OA

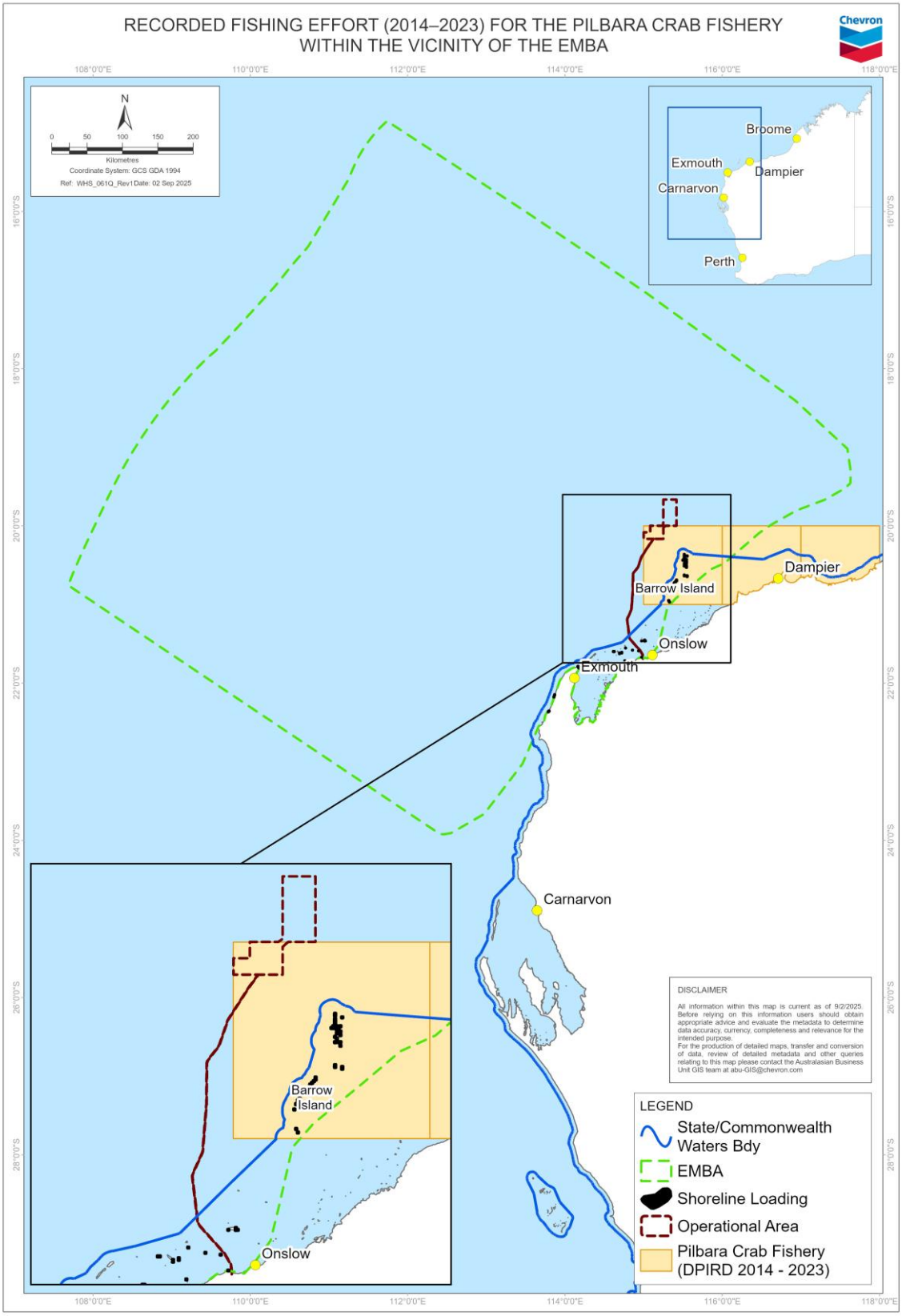


Figure 4-33: Recorded fishing effort for the Pilbara Crab Managed Fishery within the vicinity of the OA

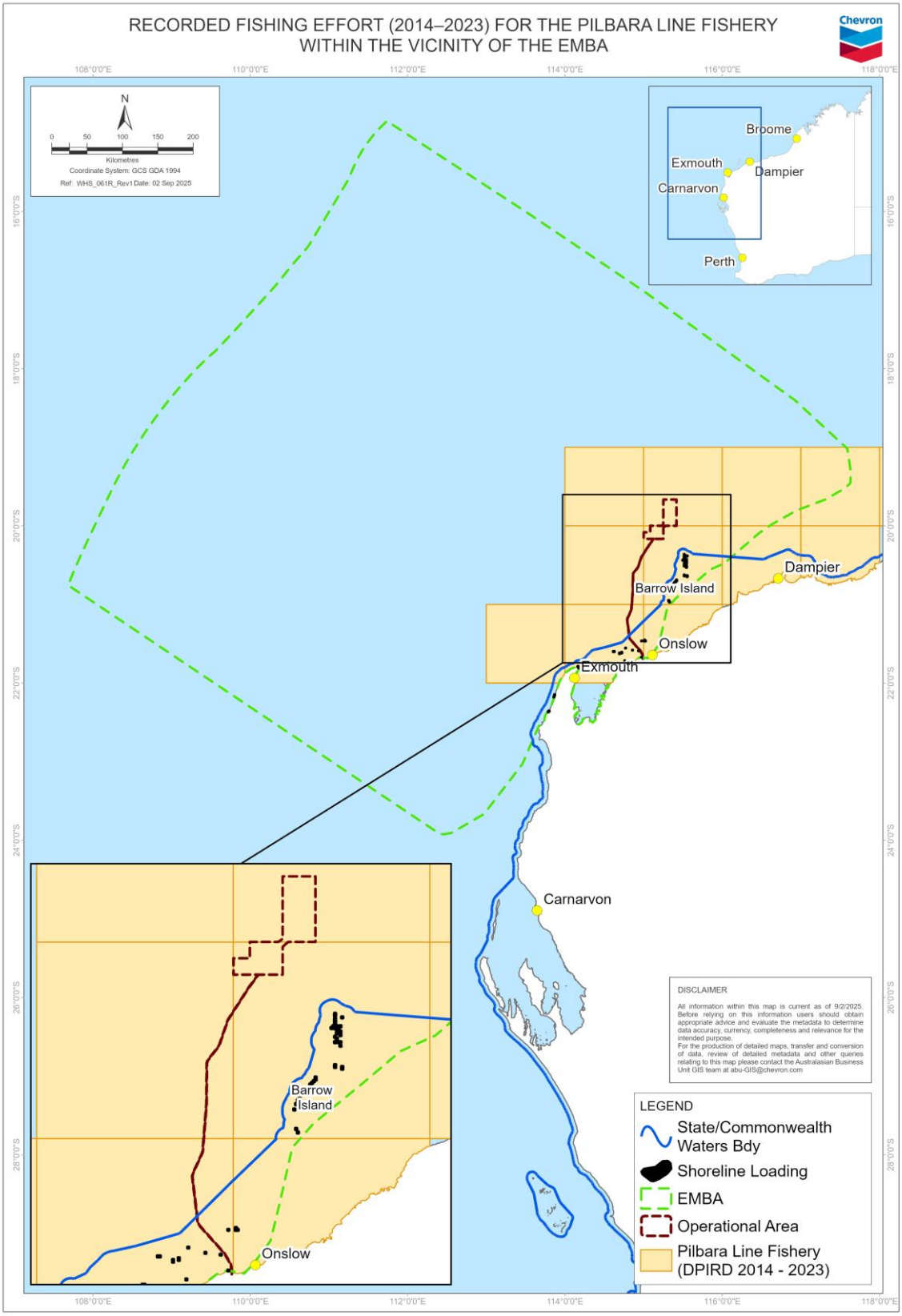


Figure 4-34: Recorded fishing effort for the Pilbara Line Fishery within the vicinity of the OA

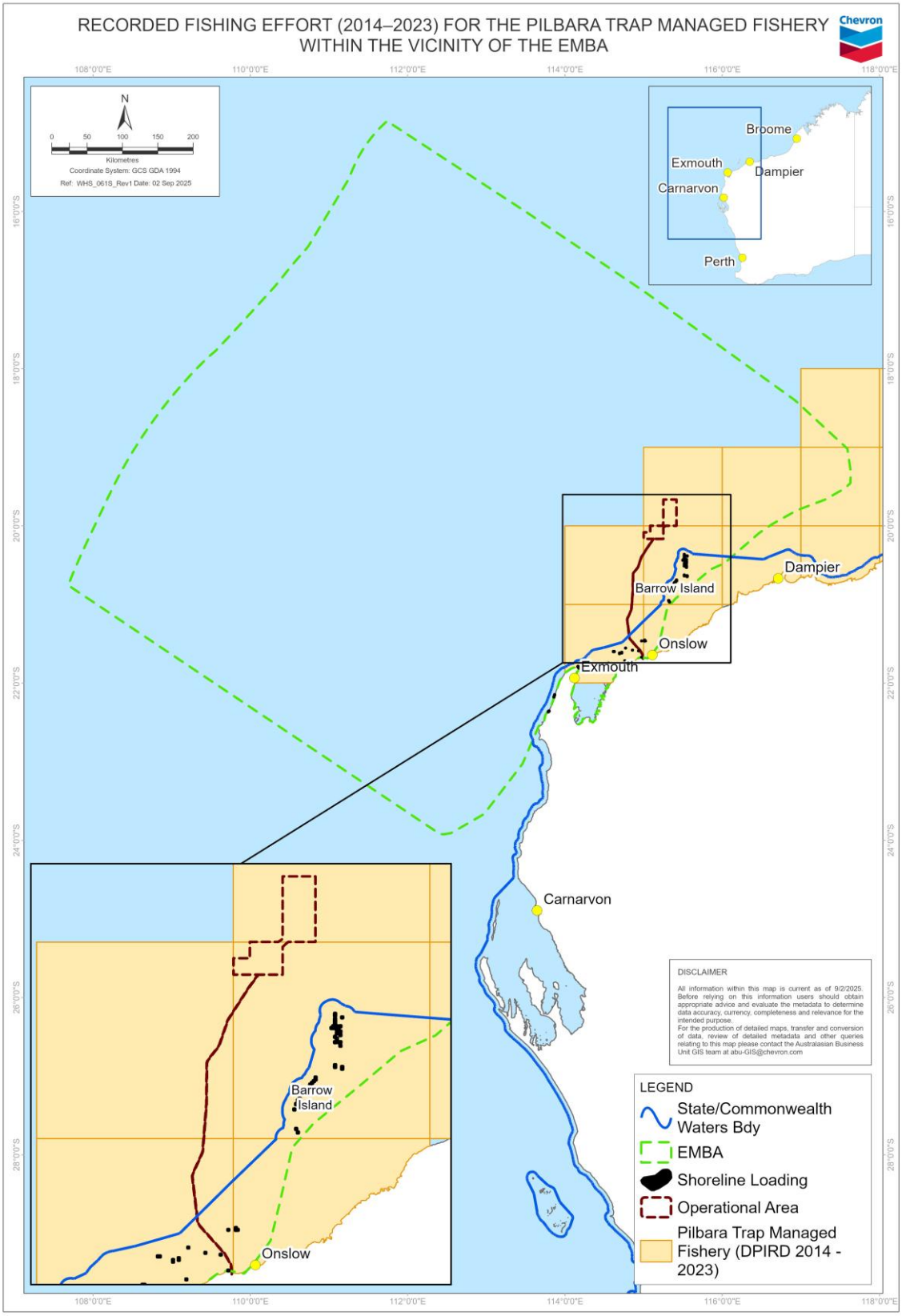


Figure 4-35: Recorded fishing effort for the Pilbara Trap Managed Fishery within the vicinity of the OA

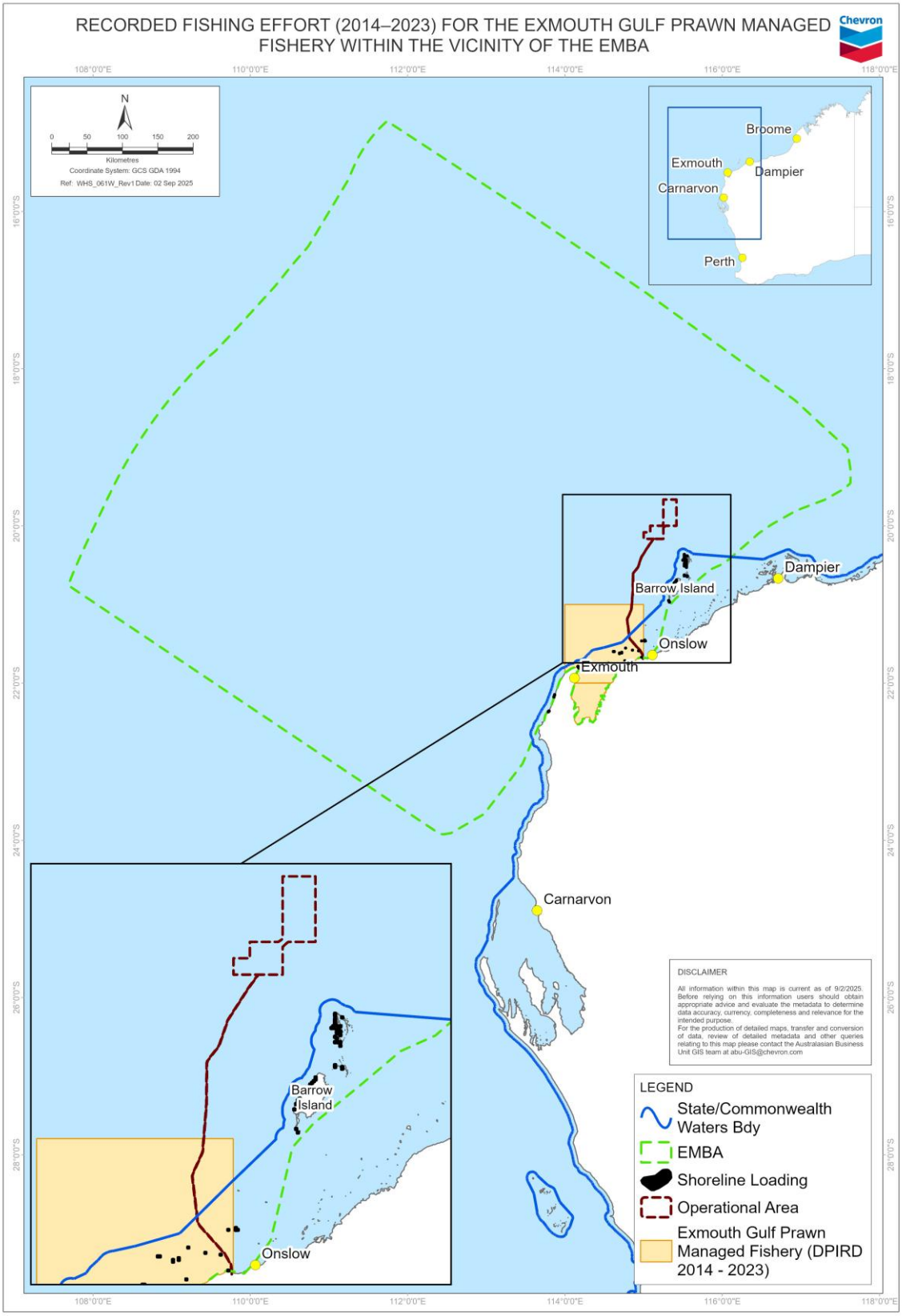


Figure 4-36: Recorded fishing effort for the Exmouth Gulf Prawn Managed Fishery within the vicinity of the OA

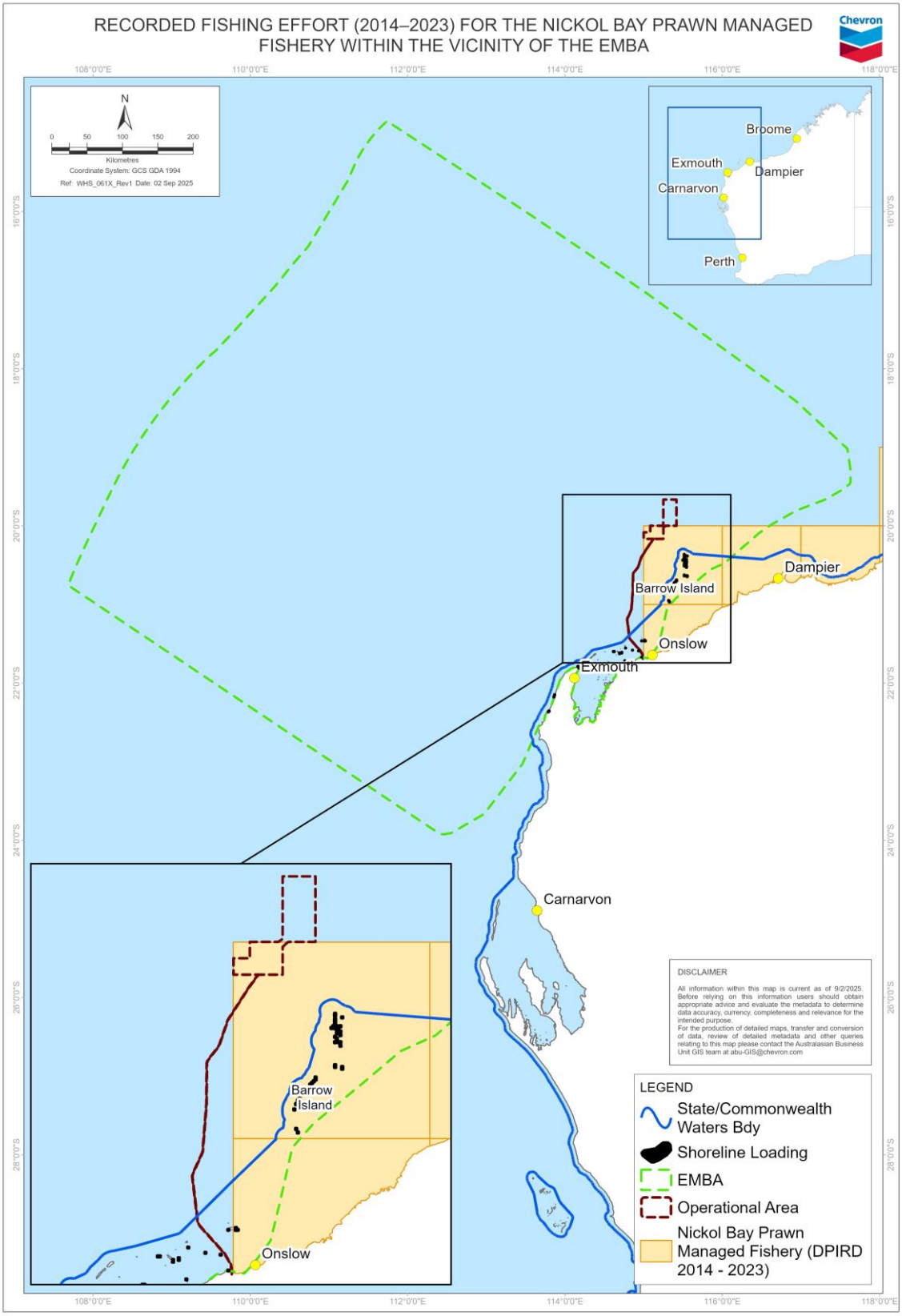


Figure 4-37: Recorded fishing effort for the Nickol Bay Prawn Managed Fishery within the vicinity of the OA

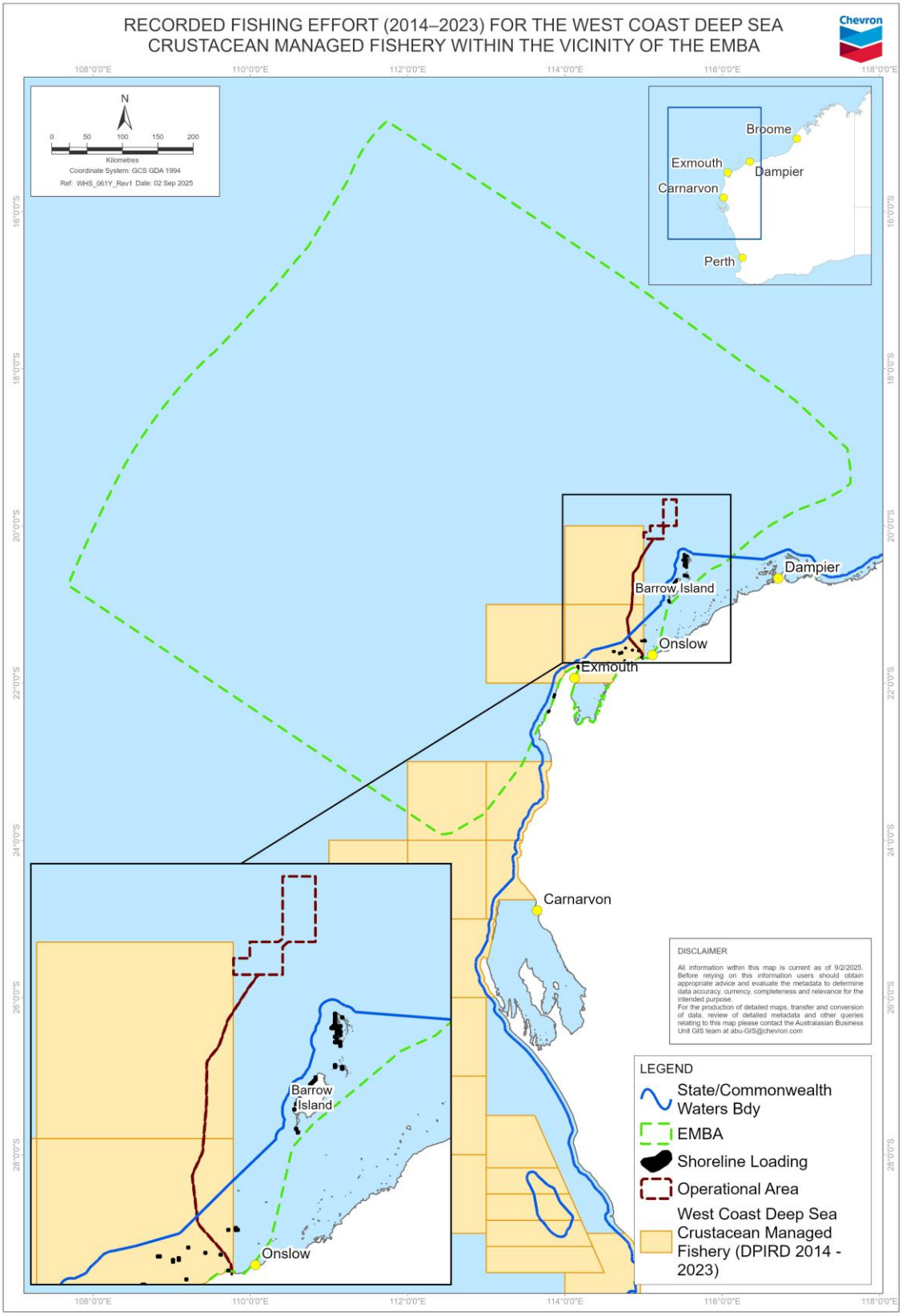


Figure 4-38: Recorded fishing effort for the West Coast Deep Sea Crustacean Managed Fishery within the vicinity of the OA

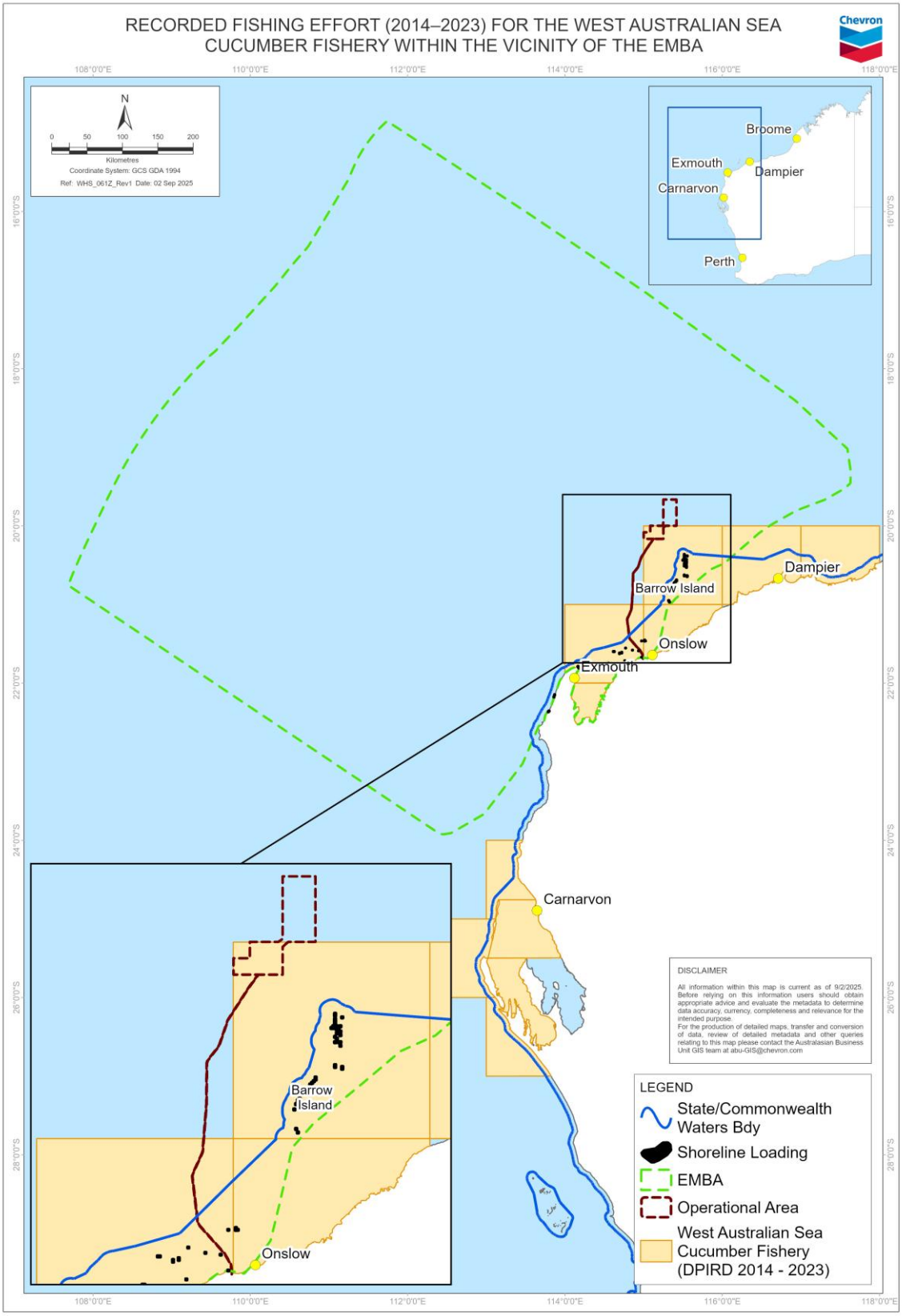


Figure 4-39: Recorded fishing effort for the West Australian Sea Cucumber Fishery within the vicinity of the OA

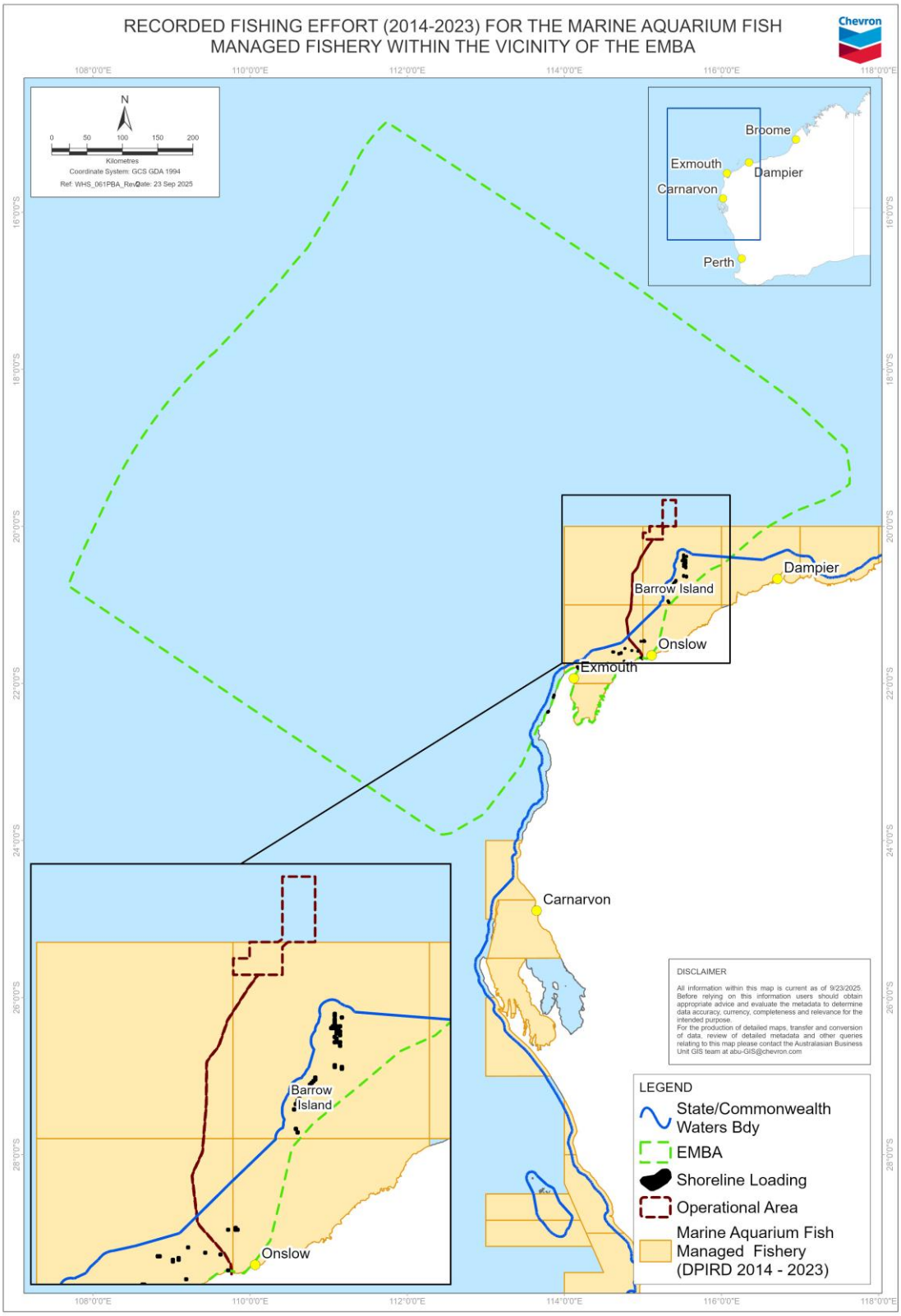


Figure 4-40: Recorded fishing effort for the Marine Aquarium Fish Managed Fishery within the vicinity of the OA

(Note: Collection effort shown for fish, and no other components (e.g. corals, invertebrates) of the fishery)

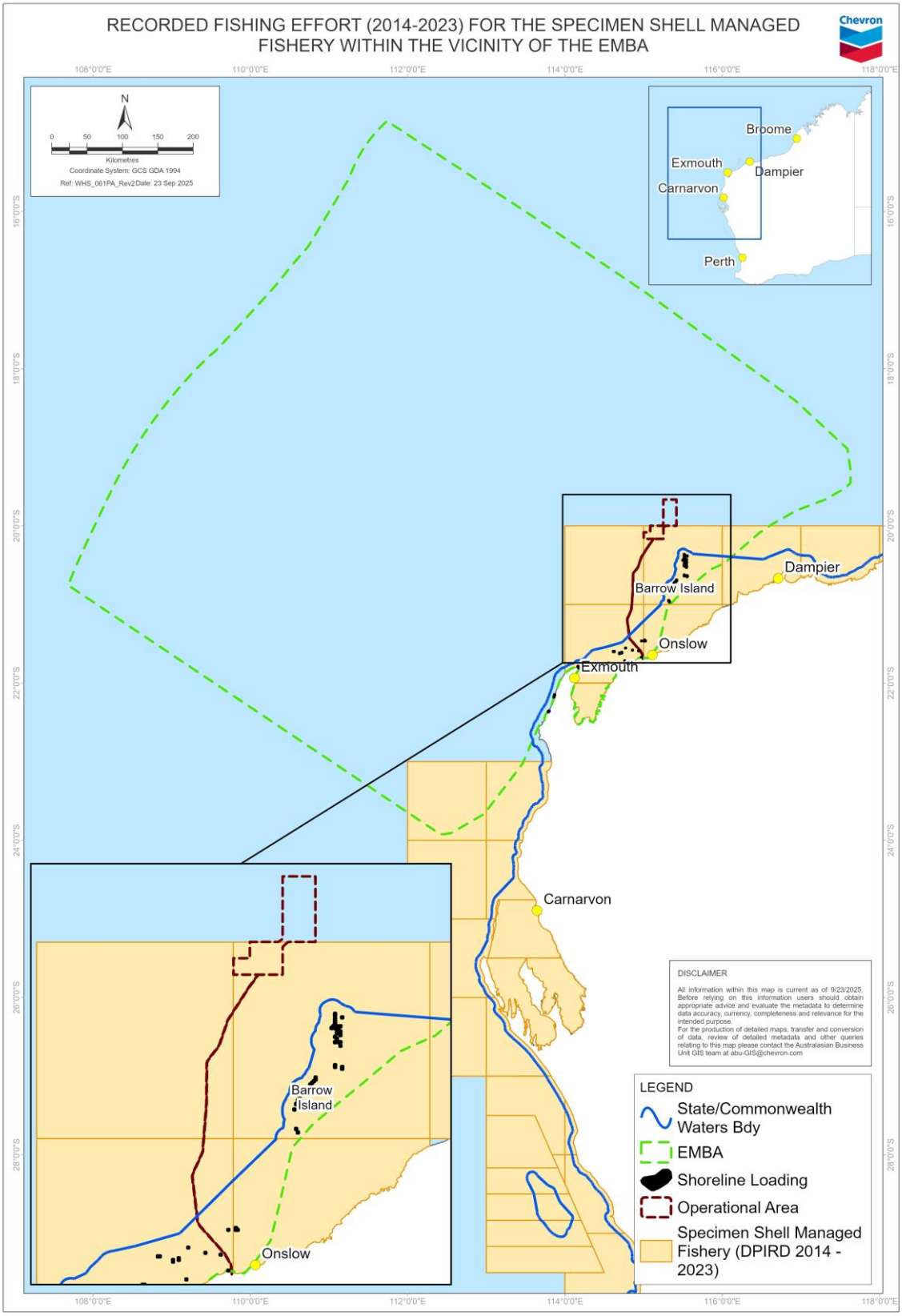


Figure 4-41: Recorded fishing effort for the Specimen Shell Managed Fishery within the vicinity of the OA

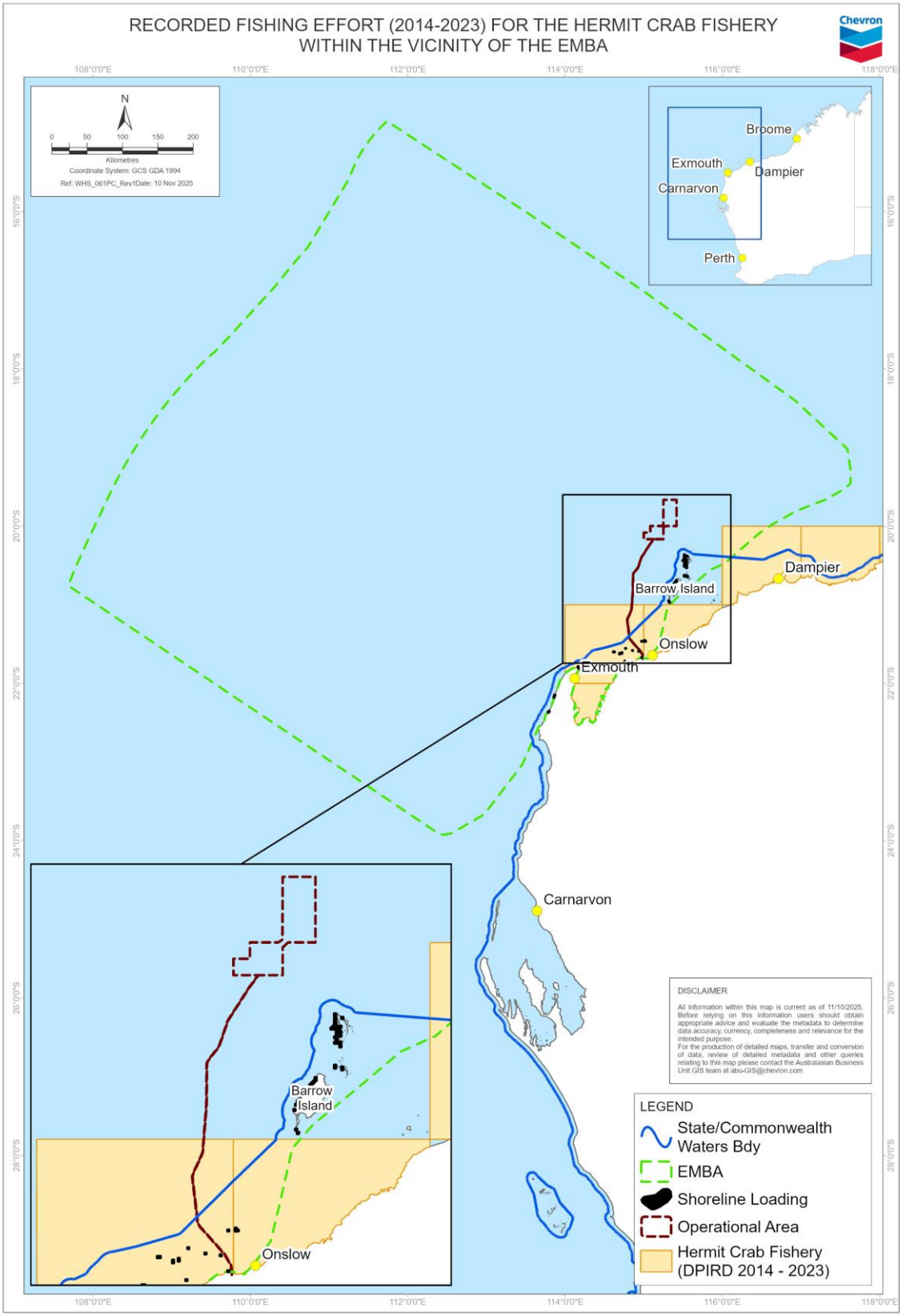


Figure 4-42: Recorded fishing effort for the Hermit Crab Fishery within the vicinity of the OA.

4.4.1.3 Pearling and aquaculture

Pearling and aquaculture operations in the northwest are typically restricted to inland and shallow coastal waters, and the majority of the OA lies in waters that are unsuitable. The small portion of the trunkline that lies within shallow waters does not intersect with any pearling or aquaculture operations.

The EMBA interfaces with the coast, including around Montebello Islands, Exmouth Gulf, the Ningaloo Coast and several Pilbara inshore islands (Figure 4-1). Some pearl farm leases exist in nearshore waters around the Montebello Islands, one pearl approved site lies close to the North Muiron Island and there are additional pearl farm leases within the Exmouth Gulf (Ref. 211).

One aquaculture licence lies within the EMBA and is located approximately 15 km from the nearest boundary to the OA (Ref. 210). Operations under this licence are associated with the Mackerel Islands which lie off the Pilbara coast.

4.4.2 Recreational fisheries

Recreational fishing is one of the most popular activities in WA with an estimated third of the population fishing recreationally (Ref. 209). The WA Department of Primary Industries and Regional Development (DPIRD) conducts state-wide recreational fishing surveys every two years, with the first survey completed in 2011. The survey collects information from more than 3,000 recreational fishers who record their catches in logbooks over a 12-month period with DPIRD also conducting interviews throughout the State and monitoring the number of boat launches and retrievals using cameras at various boat ramps.

The 2023-2024 boat based recreational fisheries report (Ref. 209) identified that most boat-based recreational fishing effort occurred in nearshore habitat (60%) followed by inshore demersal habitat (25%). A wide range of species is targeted by recreational fishing. Most fishing effort was attributed to line fishing (63%) with time of year ranging from summer (36%), autumn (26%), spring (23%) and winter (15%). The North Coast and Gascoyne Coast bioregions catch efforts both made up 9% of the statewide total with the West Coast bioregion (not included within EMBA) comprising the majority of statewide efforts (72%).

Some shore-based fishing may occur in the coastal regions within the OA and EMBA (Section 4.3.6.1).

4.4.3 Traditional fisheries

A Customary Fishing Policy has been incorporated into the *Fish Resources Management Act 1994* (WA), which allows for customary fishing by applicable persons to occur within a sustainable fisheries management framework. Customary fishing applies to person who has a traditional connection with the area being fished, and is fishing for personal, domestic, ceremonial, educational or non-commercial needs. Customary fishing does not apply to other species of marine fauna (e.g. crocodile, turtle, or dugong).

Under amendments made in 2012 to the *Conservation and Land Management Act 1984* (WA) (CALM Act), Aboriginal people can undertake customary activities, including hunting (except in marine sanctuary zones or marine nature reserves) for dugong, turtle, or crocodiles in WA.

As described in Section 4.3.6.2.1, ongoing use of marine and coastal resources, including customary fishing, is expected to occur in NWMR and adjacent coastal waters. It is expected that much of this activity will occur within shallow coastal waters and therefore would only intersect with the OA where the trunkline enters

shallow waters prior to proceeding onshore. Where shore-based fishing is undertaken, this may intersect with the OA and EMBA.

The EMBA does not intersect with the Memorandum of Understanding (MoU) Box that allows for traditional Indonesian fishers within Australian waters. The MoU Box is managed via a bilateral agreement between Australian and Indonesian governments.

4.4.4 Commercial shipping

AMSA collects vessel traffic data from various sources, including satellite shipborne automatic identification system (AIS) data, across Australia's Search and Rescue region. This data has been used to develop Figure 4-43, which shows recent vessel traffic within the vicinity of the EMBA.

The OA is located to the south-east and west of the nearest North West Shelf shipping fairways (Figure 4-43). Commercial vessels transiting the North West Shelf are expected to remain within the fairways and therefore will not typically coincide with the OA. Vessel traffic within and around the OA is most likely to comprise offshore support vessels for the petroleum activity.

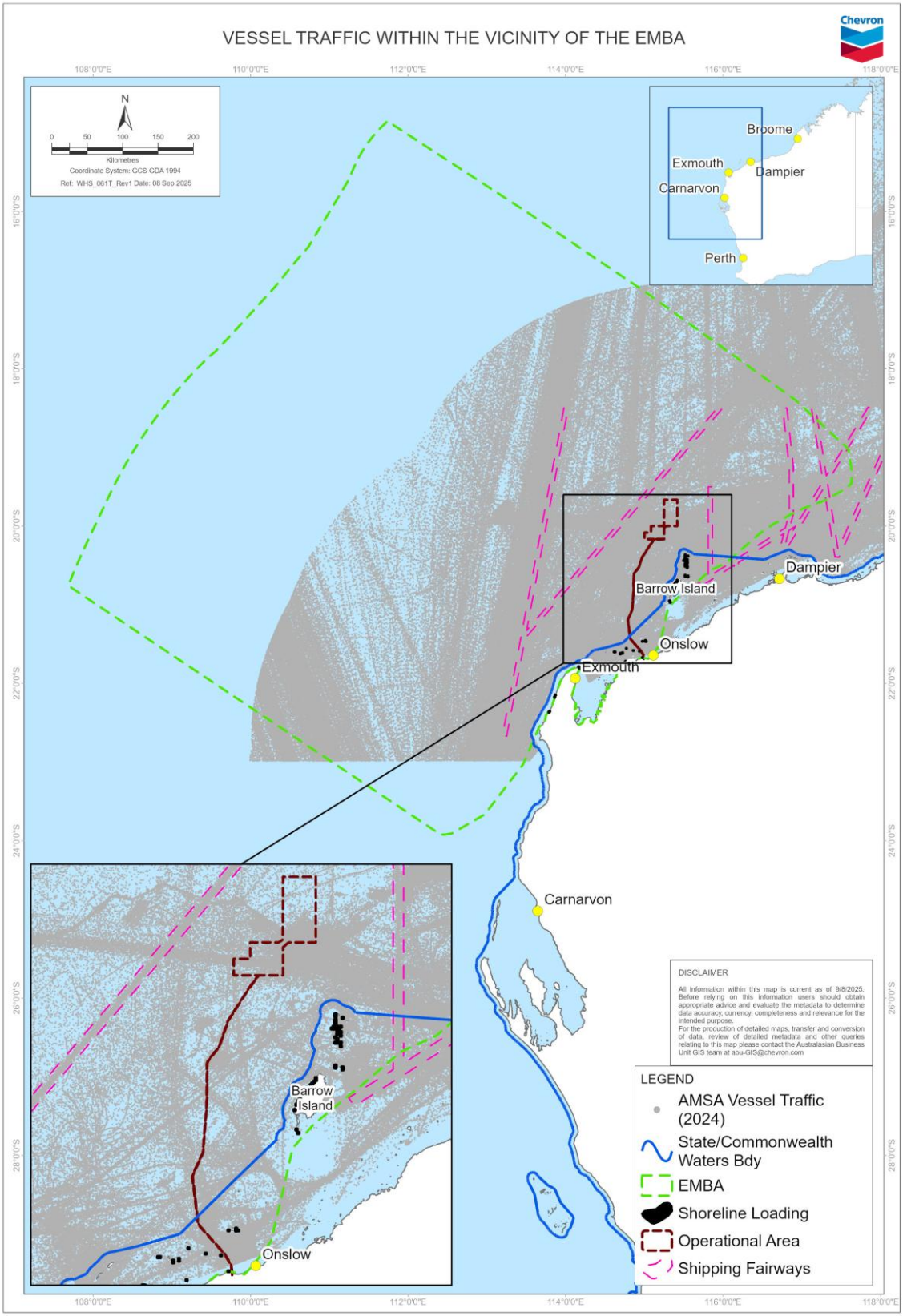


Figure 4-43: Vessel traffic within the vicinity of the OA

4.4.5 Tourism and recreation

Tourism is an important industry for WA, directly employing 66,700 people and indirectly employing a further 44,000 (Ref. 449). Charter fishing, diving, snorkelling, wildlife watching, and cruising are some of the commercial tourism activities in and adjacent to the NWMR (Ref. 216). Except for offshore fishing, most marine tourism and recreational activities occur in shallower State waters (Ref. 216).

The majority of the OA occurs offshore with limited interface with the coast. Where the trunkline enters shallower coastal waters and proceeds onshore, there may be tourism and recreational activities occurring. Given that this area is not considered a popular tourist destination in comparison to others in the area, there is limited tourism and recreational activities expected within the OA.

The EMBA interfaces with the coast, including the Ningaloo coast, Exmouth Gulf, the Montebello Islands and other Pilbara inshore islands (Figure 4-1). As described in Section 4.3.6.1, tourism and recreational activities may occur around the Montebello Islands, other Pilbara islands and Ningaloo/Exmouth areas.

The Gascoyne and Pilbara regions are popular visitor destinations for both Australian and international tourists. The main marine nature-based tourist activities within the Gascoyne Region are concentrated around and within the Ningaloo Coast World Heritage property. Activities undertaken include recreational fishing, snorkelling and scuba diving, wildlife watching and encounters (including Whale Sharks, Manta Rays, Humpback Whales and turtles) (Ref. 421), as well as beach access, surfing and paddling sports. Recreational fishing within the Pilbara region tends to be concentrated in State waters adjacent to population centres. Charter vessels may also frequent the waters surrounding the Montebello Islands (Ref. 173).

4.4.6 Other marine and coastal industries

Several other marine and coastal industries may be present within the EMBA (Table 4-22). No offshore renewable energy facilities, salt mines, or onshore processing facilities were identified within the EMBA.

Table 4-22: Presence of industries

Industry	OA	EMBA
Defence		✓
Submarine cables		✓

The Royal Australian Air Force (RAAF) have a base located at Learmonth, and there is a designated maritime firing practices and exercise area associated with this base (Ref. 449). The Royal Australian Navy has three communication stations on the North West Cape peninsula. Harold E Holt Area A (outside of the EMBA) is at the northern extent of North West Cape, and includes a very low frequency radio, towers and associated infrastructure, the Point Murat Navy Pier, and the waters extending 400 m around the pier (Ref. 197). There are no known sites of unexploded ordnance within the OA (Ref. 175).

Submarine telecommunications cables are underwater infrastructure linking Australia with other countries—these cables carry the bulk of Australia's international voice and data traffic. There are no known submarine telecommunications cables within the OA; however, the Darwin-Jakarta-Singapore Cable intersects the EMBA. This cable links the existing Australia Singapore Cable to the North-West Cable System. Under Part 2 of the *Telecommunications Act 1997* (Cth), the Australian Communications and Media Authority (ACMA) can declare

protection zones covering the cables to prohibit and/or restrict activities that may damage them. The protection zones are generally the area within 1.85 km (1 nm) either side of the cable and include both the waters and seabed within the area. No protection zone has been declared to the Darwin-Jakarta-Singapore Cable.

The *Port Authorities Act 1999* (WA) governs WA's port authorities, covering their functions, responsibilities, concept of operations and related matters. The *Shipping and Pilotage Act 1967* (WA) governs shipping and pilotage in and about ports, boat harbours, and mooring control areas of WA. The Barrow Island Port is a declared port under this Act.

The Northern Carnarvon Basin is one of the most heavily explored and developed petroleum basins in Australia. The Northern Carnarvon, Browse and Bonaparte basins together comprise most of Australia's natural gas reserves (Ref. 182). The Carnarvon Basin supports >95% of WA's oil and gas production, and accounts for ~63% of Australia's total production of crude oil, condensate, and natural gas (Ref. 182).

The OA does not intersect any other current CAPL projects, however there are a number of other CAPL and non-CAPL operator projects and activities that may take place within 50 km of the OA. Table 4-23 lists the other planned petroleum activities identified within 50 km from the OA, and which may occur within the next five years (based on NOPSEMA-accepted EPs).

Table 4-23: Planned petroleum activities within 50 km of the OA

Nominated titleholder	Project	Description	Distance from the OA (~km)
CAPL	Gorgon and Jansz Gas Development operations	• operations • IMR activities • continuous operations will occur concurrently with the petroleum activity	Gorgon and Jansz Production Pipelines: intersect Gorgon Production wells OA: 13 km
	J–IC Infrastructure Project	• the installation, hook-up and pre-commissioning activities of the J–IC infrastructure are indicatively scheduled from 2025 to mid-2027 over multiple campaigns • J–IC infrastructure start-up activities are indicatively scheduled from 2027 to 2028 • J–IC activities may occur concurrently with the petroleum activity	50 km
	Gorgon and Jansz drilling, well intervention and well abandonment activities	• drilling well intervention and/or plug and abandonment activities • activities are not currently scheduled but may occur concurrently with the petroleum activity if implemented.	<5 km

Nominated titleholder	Project	Description	Distance from the OA (~km)
	Jansz Barrow Umbilical Project	• install a fibre-optic and electrical control umbilical (referred to as the umbilical) between the offshore Jansz Central Distribution Unit (CDU) and Gorgon CDU	<5 km
	Wheatstone infill drilling, well intervention and well abandonment	• infill drilling activities (up to 7 wells) • contingency activities, including well intervention and/or plug and abandonment • drilling activities may occur concurrently with the petroleum activity	>50 km
Woodside	Scarborough Project	• operations • trunkline IMR activities • continuous operations will occur concurrently with the petroleum activity	Intersects
	Macedon Gas Project	• Inspection, maintenance and repair (IMR) activities are undertaken on an 'as required' basis to ensure the ongoing integrity of infrastructure throughout the life of field. IMR activities consist of vessel-based operations with ROV and AUV activities.	~15 km from Wheatstone (WHS) Trunkline shore crossing

4.5 Qualities and characteristics of locations, places and areas

The qualities and characteristics of the protected places present within the EMBA are described in the following sections.

4.5.1 Australian marine parks

Marine parks help conserve marine habitats and the marine species that live within and rely on these habitats. Marine parks also provide places for people to watch wildlife, dive, and go boating, snorkelling, or fishing (Ref. 433).

The North-west Marine Parks Network Management Plan (Ref. 415) defines the following types of values for the Marine Parks in the North-west Network:

a. natural values - habitats, species and ecological communities, and the processes that support their connectivity, productivity and function

b. cultural values - living and cultural heritage recognising First Nations beliefs, practices and obligations for Country, places of cultural significance and cultural heritage sites

c. heritage values - non-First Nations heritage that has aesthetic, historic, scientific or social significance

d. socioeconomic values - the benefits for people, businesses and/or the economy.

The objectives of the North-west Marine Parks Network Management Plan (Ref. 415) are to provide for:

- the protection and conservation of biodiversity and other natural, cultural and heritage values of marine parks in the North-west Network
- ecologically sustainable use and enjoyment of the natural resources within marine parks in the North Network, where this is consistent with objective.

AMPs occur within Commonwealth waters and have been proclaimed under the EPBC Act in 2007 and 2013. There is a ~3.6 km^2 intersection of the Montebello AMP with the OA, however outside of this no other AMPs intersect the OA. The presence of AMPs within the EMBA are shown in Figure 4-44 and the values summarised in Table 4-24.

Table 4-24: Presence of AMPs

Australian Marine Park^	OA	EMBA
Argo-Rowley Terrace (Multiple use zone [IUCN VI])		✓
The Argo-Rowley Terrace Marine Park is located ~270 km north-west of Broome, Western Australia, and extends to the limit of Australia's exclusive economic zone. The Marine Park is adjacent to the Mermaid Reef Marine Park and the Western Australian Rowley Shoals Marine Park. The Marine Park covers an area of 146,003 km^2 and water depths range from 220–6,000 m. **Natural Values** The Marine Park includes habitats, species and ecological communities associated with: • the Northwest Transition – an area of shelf break, continental slope and most of the Argo Abyssal Plain. Key topographic features include Mermaid, Clerke and Imperieuse Reefs, which collectively are a biodiversity hotspot • Timor Province – an area dominated by warm, nutrient-poor waters. Canyons are an important feature of the Marine Park and are generally associated with high productivity and aggregations of marine life. The Marine Park supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. Biologically important areas within the Marine Park include resting and breeding habitat for seabirds and a migratory pathway for the pygmy blue whale. **Cultural Values** Sea country is valued for Indigenous cultural identity, health and wellbeing. Across Australia, Indigenous people have been sustainably using and managing their sea country for tens of thousands of years. At the commencement of this plan, there is limited information about the cultural significance of this Marine Park **Heritage Values** No World, Commonwealth or national heritage listings apply to the Marine Park. **Historic Shipwrecks** The Marine Park contains two known shipwrecks listed under the UCH Act: Alfred (wrecked in 1908) and Pelsart (wrecked in 1908). **Social and economic values** Commercial fishing and mining are important activities in the Marine Park. These activities contribute to the wellbeing of regional communities and the prosperity of the nation.		
Carnarvon Canyon (Habitat Protection Zone [IUCN IV])		✓

The Carnarvon Canyon Marine Park is ~300 km north-west of Carnarvon. It covers an area of 6,177 km^2 and has a water depth range of 1,500–6,000 m.

Natural Values

The Marine Park includes examples of ecosystems representative of:

- the Central Western Transition – a bioregion characterised by:
- large areas of continental slope
- a range of topographic features such as terraces, rises and canyons
- seasonal and sporadic upwelling
- benthic slope communities comprising tropical and temperate species
- deepwater ecosystems associated with the Carnarvon Canyon

The Marine Park lies within a transition zone between tropical and temperate species and is an area of high biotic productivity.

Cultural Values

Sea country is valued for Indigenous cultural identity, health and wellbeing. Across Australia, Indigenous people have been sustainably using and managing their sea country for tens of thousands of years. At the commencement of this plan, there is limited information about the cultural significance of this Marine Park

Heritage Values

No World, Commonwealth or national heritage listings apply to the Marine Park.

Social and economic values

Commercial fishing is an important activity in the Marine Park. These activities contribute to the wellbeing of regional communities and the prosperity of the nation.

Gascoyne (Multiple use zone [IUCN VI])] Habitat Protection Zone [IUCN IV], National Park Zone [IUCN II])		✓

The Gascoyne Marine Park is located ~20 km off the west coast of the Cape Range Peninsula, adjacent to the Ningaloo Reef Marine Park and the Western Australian Ningaloo Marine Park, and extends to the limit of Australia's EEZ. The Marine Park covers an area of 81,766 km² and water depths between 15 m and 6,000 m.

Natural values

The Marine Park includes examples of ecosystems representative of:

- Central Western Shelf Transition—continental shelf with water depths up to 100 m, and a significant transition zone between tropical and temperate species
- Central Western Transition—characterised by large areas of continental slope; a range of topographic features such as terraces, rises, and canyons; seasonal and sporadic upwelling; and benthic slope communities comprising tropical and temperate species
- Northwest Province—an area of continental slope comprising diverse and endemic fish communities.

The marine park includes four KEFs characterised by seasonal and sporadic upwelling, nutrient-rich water and aggregations of marine life and high diversity of demersal fish assemblages. The Marine Park supports a range of species including those listed as threatened, migratory, marine, or cetacean under the EPBC Act. BIAs within the Marine Park include breeding habitat for seabirds; internesting habitat for marine turtles; a migratory pathway for Humpback Whales; and foraging habitat and migratory pathway for Pygmy Blue Whales.

Cultural values

First Nations people have a deep and ongoing connection to Sea Country which is central to their identity, health and sense of belonging. This deep connection is reflected in their languages, ceremonies, and customs, and bring with it obligations to protect their Sea Country. Across Australia, First Nations people have been sustainably using and managing their Sea Country for tens of thousands of years. The Baiyungu, Thalanyji and Yinggarda People have the Traditional Custodians for the Sea Country in the Gascoyne Marine Park.

Heritage values

No World, Commonwealth or national heritage listings apply to the Marine Park, however the Marine Park is adjacent to the Ningaloo Coast World, Commonwealth and national heritage.

Social and economic values

Commercial fishing, mining and recreation are important activities in the Marine Park. These activities contribute to the wellbeing of regional communities and the prosperity of the nation.		
Montebello (Multiple use zone [IUCN VI])]	✓	✓
The Montebello Marine Park is located offshore of Barrow Island and 80 km west of Dampier extending from the WA state water boundary, and is adjacent to the Barrow Island and Montebello Islands Marine Parks. The Marine Park covers an area of 3,413 km² and water depths from <15 m to 150 m. **Natural values** The Marine Park includes examples of ecosystems representative of the Northwest Shelf Province—a dynamic environment influenced by strong tides, cyclonic storms, long-period swells, and internal tides. The bioregion includes diverse benthic and pelagic fish communities, and ancient coastline. The Ancient coastline at the 125 m depth contour KEF intersects the north-west boundary of the park, thought to be an important sea floor feature and migratory pathway for Humpback Whales (Section 4.3.3.1.1). The Marine Park supports a range of species including species listed as threatened, migratory, marine, or cetacean under the EPBC Act. BIAs within the Marine Park include breeding habitat for seabirds; internesting, foraging, mating, and nesting habitat for marine turtles; a migratory pathway for Humpback Whales; and foraging habitat for Whale Sharks. **Cultural values** First Nations people have a deep and ongoing connection to Sea Country which is central to their identity, health and sense of belonging. This deep connection is reflected in their languages, ceremonies, and customs, and bring with it obligations to protect their Sea Country. Across Australia, First Nations people have been sustainably using and managing their Sea Country for tens of thousands of years. The Thalanyji and Nhuwala People are the Traditional Custodians of the Sea Country in the Montebello Marine Park. **Heritage values** No international, Commonwealth or national listings apply to the Marine Park, however the Marine Park is adjacent to the Western Australia Barrow Island and the Montebello– Barrow Island Marine Conservation Reserves which have been nominated for national heritage listing. **Social and economic values** Tourism, commercial fishing, mining and recreation are important activities in the Marine Park. These activities contribute to the wellbeing of regional communities and the prosperity of the nation.		
Ningaloo Marine Park (Recreational Use Zone [IUCN IV], National Park Zone [IUCN II])		✓
The Ningaloo Marine Park stretches ~300 km along the west coast of the Cape Range Peninsula, and is adjacent to the Western Australian Ningaloo Marine Park and Gascoyne Marine Park. The Marine Park covers an area of 2,435 km² and a water depth range of 30 m to more than 500 m. **Natural values** The Marine Park includes examples of ecosystems representative of: • Central Western Shelf Transition—continental shelf of water depths up to 100 m, and a significant transition zone between tropical and temperate species • Central Western Transition—characterised by large areas of continental slope; a range of topographic features such as terraces, rises, and canyons; seasonal and sporadic upwelling; and benthic slope communities comprising tropical and temperate species • Northwest Province—an area of continental slope comprising diverse and endemic fish communities • Northwest Shelf Province—a dynamic environment, influenced by strong tides, cyclonic storms, long-period swells, and internal tides. The bioregion includes diverse benthic and pelagic fish communities, and ancient coastline thought to be an important sea floor feature and migratory pathway for Humpback Whales. Key ecological features of the Marine Park are: • Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula—an area resulting in upwelling of nutrient-rich water and aggregations of marine life • Commonwealth waters adjacent to Ningaloo Reef—an area where the Leeuwin and Ningaloo currents interact, resulting in enhanced productivity and aggregations of marine life		

- Continental slope demersal fish communities—an area of high diversity among demersal fish assemblages on the continental slope.

Ecosystems represented in the Marine Park are influenced by interaction of the Leeuwin Current, Leeuwin Undercurrent, and the Ningaloo Current.

The Marine Park supports a range of species including species listed as threatened, migratory, marine, or cetacean under the EPBC Act. BIAs within the Marine Park include breeding and or foraging habitat for seabirds; internesting habitat for marine turtles; a migratory pathway for Humpback Whales; foraging habitat and migratory pathway for Pygmy Blue Whales; breeding, calving, foraging, and nursing habitat for dugong; and foraging habitat for Whale Sharks.

Cultural values

First Nations people have a deep and ongoing connection to Sea Country which is central to their identity, health and sense of belonging. This deep connection is reflected in their languages, ceremonies, and customs, and bring with it obligations to protect their Sea Country. Across Australia, Indigenous people have been sustainably using and managing their Sea Country for tens of thousands of years. The Baiyungu, Thalanyji and Yinggarda People are the Traditional Custodians for the Sea Country in the Ningaloo Marine Park.

Heritage values

World heritage

The Marine Park is within the Ningaloo Coast World Heritage Property, recognised for its outstanding universal heritage values, meeting world heritage listing criteria vii and x. In addition to the Marine Park, the world heritage area includes the Western Australian Ningaloo Marine Park, the Muiron Islands, the Western Australian Cape Range National Park and other terrestrial areas. The area is valued for high terrestrial species endemism, marine species diversity and abundance, and the interconnectedness of large-scale marine, coastal and terrestrial environments. The area connects the limestone karst system and fossil reefs of the ancient Cape Range to the nearshore reef system of Ningaloo Reef, to the continental slope and shelf in Commonwealth waters.

National heritage

The Ningaloo Coast overlaps the Marine Park and was established on the National Heritage List in 2010, meeting the national heritage listing criteria A, B, C, D, and F.

Commonwealth heritage

The Ningaloo Marine Area (Commonwealth waters) was established on the Commonwealth Heritage List in 2004, meeting Commonwealth heritage listing criteria A, B and C. The Ningaloo Marine Area overlaps the Marine Park.

Historic shipwrecks

The Marine Park contains more than 15 known shipwrecks listed under the UCH Act.

Social and economic values

Tourism and recreation, including fishing, are important activities in the Marine Park. These activities contribute to the wellbeing of regional communities and the prosperity of the nation.

^*Source: Ref. 415*

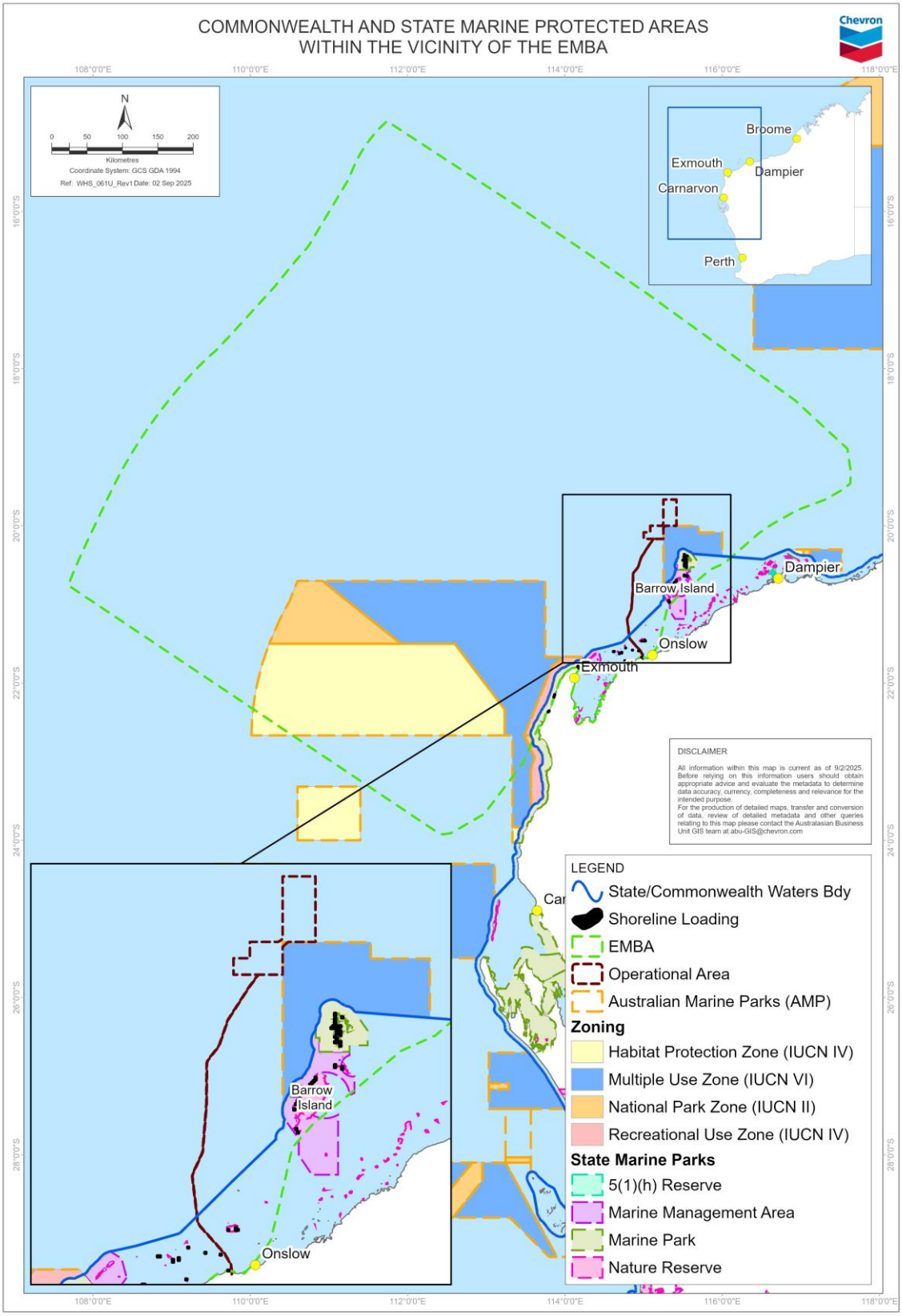


Figure 4-44: Commonwealth and State marine protected areas within the vicinity of the EMBA

4.5.2 State marine protected areas

State marine parks and marine management areas, proclaimed under the CALM Act, are located in State waters and are vested in the WA Conservation and Parks Commission.

There are no State marine parks, or management areas within the OA. Table 4-25 lists and Figure 4-44 illustrates the State marine parks and marine management areas within the EMBA.

Table 4-25: Presence of State marine protected areas

State marine protected areas	Zone Type (IUCN category)	OA	EMBA
Barrow Island Marine Park	Unassigned (IUCN IA)		✓
Barrow Island Marine Management Area	Unassigned (IUCN VI)		✓
Montebello Islands Marine Park	General Use Zone (IUCN II)		✓
	Sanctuary zone (IUCN IA)		✓
	Special Purpose Zone – Pearling (IUCN VI)		✓
	Recreation Zone (IUCN II)		✓
	Sanctuary Zone (IUCN IA)		✓
	Unassigned (IUCN II)		✓
	Special Purpose Zone (Benthic Protection) (IUCN IV)		✓
Muiron Islands Marine Management Area	MMA (Unclassified) (IUCN VI)		✓
	Conservation Area (IUCN IA)		✓
Ningaloo Marine Park	Sanctuary Zone (IUCN IA)	✓	
	General Use (IUCN II)		✓
	Recreation Area (IUCN II)		✓
	Special Purpose Zone (Shore Based Activities) (IUCN II)		✓
	Special Purpose Zone (Benthic Protection) (IUCN IV)		✓
	Unassigned (IUCN II)		✓

The Barrow Island Marine Management Area (MMA) is the largest reserve within the Montebello/Barrow Islands marine conservation reserves, covering 114,693 ha (Ref. 173). The MMA includes most of the waters around Barrow Island, the Lowendal Islands and the Barrow Island Marine Park, with the exclusion of the port areas of Barrow Island and Varanus Island. The MMA is not zoned apart from one specific management zone: the Bandicoot Bay Conservation Area. This conservation area is on the southern coast of Barrow Island and has been created to protect benthic fauna and seabirds. It includes the largest intertidal sand/mudflat community in the reserves, is known to be high in invertebrate diversity and is an important feeding area for migratory birds. Barrow Island MMA includes significant breeding and nesting areas for marine turtles and the waters support a diversity of tropical marine fauna, important coral reefs and unique mangrove communities (Ref. 173).

The Barrow Island Marine Park covers 4,169 ha, all of which is zoned as sanctuary zone (the Western Barrow Island Sanctuary Zone). It includes Biggada Reef an ecologically significant fringing reef, and Turtle Bay, an important turtle aggregation and breeding area. Representative areas of seagrass, macroalgal and deep water habitat are also represented within the marine park (Ref. 173).

The Montebello Islands Marine Park (58,331 ha) consists of two sanctuary zones, two recreation zones, one special purpose zone for benthic protection, eleven special purpose zones for pearling and general use zones. The Montebello Islands comprise over 100 islands, the majority of which are rocky outcrops; rocky shore accounts for 81% of shoreline habitat.

The ecological and conservation values of the Montebello Island Marine Park, Barrow Island Marine Park and Barrow Island MMA comprise habitats including corals reefs and bommies, mangroves, seagrass and macroalgae meadows, rocky shorelines and hard substrate, intertidal sand and mudflat communities. These habitats provide protection, food and habitat for a large diversity of species, including dugongs, turtles, whales, other protected cetaceans and birds as well as sea snakes and fish.

The Muiron Islands Marine Management Area, covers an area of 28,616 ha and is recognised for its rich marine biodiversity, coral reefs, filter-feeding communities and macroalgal beds (Ref. 145) and serve as important nesting sites for seabirds and green turtles (Ref. 141).

The Ningaloo Marine Park was established in May 1987 and covers an area of ~263,343 ha. 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 coral reefs, abundant fishes and species with special conservation significance such as turtles, whale sharks, dugongs, whales and dolphins (Ref. 141). The region has diverse marine communities including mangroves, algae and filter-feeding communities and has high water quality (Ref. 141).

4.5.3 State terrestrial protected areas

Terrestrial protected areas, proclaimed under the CALM Act, are on State lands and are vested in the WA Conservation and Parks Commission.

The OA occurs offshore and does not have any interface with the coast. Table 4-26 lists and Figure 4-44 illustrates the State terrestrial protected areas that intersect the EMBA.

Table 4-26: Presence of State terrestrial protected areas

Terrestrial protected areas	Zone Type (IUCN category)	OA	EMBA
Barrow Island Nature Reserve*	Strict Nature Reserve (IUCN Ia)		✓
Boodie, Double Middle Islands Nature Reserve*	Nature Reserve (IUCN Ia)		✓
Montebello Islands Conservation Park^	Conservation Park (IUCN II)		✓
Nyinggulu National Park^	National Park (IUCN II)	✓	
Pilbara Inshore Islands (including Great Sandy Island, Bessieres Island and Thevenard Island Nature Reserves)*^	Nature Reserve (IUCN Ia)	✓	

** Protected area is landward of LWM.*

^ Protected area is landward of HWM.

Section 4.3.6.1 describes the Pilbara inshore Islands Nature Reserves.

The Barrow Group Nature Reserves covers Barrow Island Nature Reserve and Boodie, Double and Middle Islands Nature Reserve. Barrow Island is gazetted as a Class A Nature Reserve (Reserve 11648), for the purpose of conservation of its flora and fauna. The Barrow Island Nature Reserve covers 23,483 ha, comprising the land extent of Barrow Island and extending to low water mark (the intertidal zone) (Ref. 180). The shoreline of Barrow Island is ~100 km.

Boodie and Middle Islands are part of the 'Boodie, Double and Middle Islands Nature Reserve' (Reserve 38728, other than Class A), which was gazetted in 1984. This Nature Reserve covers 586.7 ha and extends to the low water mark. The shoreline of Boodie and Middle Islands are ~8 and 12 km respectively (Ref. 180).

The Barrow Group Nature Reserves are valued for their diverse and relatively unaltered fauna assemblages, their extensive karst systems and the subterranean fauna they support and the important habitat they provide for nesting marine turtles and migratory shorebirds (Ref. 180). The Barrow Group Nature Reserves are also important because they contain an array of conservation significant fauna species and populations, including species that are threatened, priority-listed, endemic, short range endemic, relictual and/or disjunct (Ref. 180).

The Montebello Islands Conservation Park incorporated the islands of the Montebello archipelago and are surrounded by the Montebello Islands Marine Park. The islands are located ~120 km west of Dampier and 8,000 years ago were once part of mainland Australia. Rising sea levels flooded the coastal plain leaving low-lying limestone remnants, a scattered group of islands comprising intertidal and subtidal coral reefs and sheltered lagoons.

The Nyinggulu (Ningaloo) National Park, located on Western Australia's Coral Coast, is valued for its ecological, cultural, and recreational significance. This World Heritage-listed area is renowned for its pristine Ningaloo Reef, one of the largest fringing coral reefs globally, which supports a diverse array of marine life, including whale sharks, turtles, and vibrant coral ecosystems. The park also encompasses rugged limestone ranges, unique cave systems, and native flora and fauna, reflecting its terrestrial biodiversity.

4.6 Heritage value of places

Listed World Heritage properties and National Heritage places are MNES under the EPBC Act, and a relevant value and sensitivity under the OPGGS(E)R. Table 4-27 identifies the presence of these, and other marine or coastal heritage protected places, within the OA and EMBA.

Table 4-27: Presence of heritage values

Feature	OA	EMBA
World Heritage property		
Ningaloo Coast		✓
National Heritage place		
Ningaloo Coast		✓
Commonwealth Heritage place		

Feature	OA	EMBA
Ningaloo Marine Area – Commonwealth Waters		✓
Learmonth Air Weapons Range Facility		✓
Indigenous Protected Areas		
N/A	*(none identified within the OA/EMBA)*	
Sites or artefacts protected under the *Underwater Cultural Heritage Act 2018* (Cth) (Ref. 28)		
Historic shipwrecks (>75 years old)	✓	✓
Shipwrecks	✓	✓
Sunken aircraft	*(none identified within the OA/EMBA)*	
In situ artefact	*(none identified within the EMBA)*	
Sites or artefacts protected under the *Aboriginal Heritage Act 1972* (WA)[7] (Ref. 479)		
Artefacts, middens, burial sites, hunting places, ritual/ceremonial sites, painting, creation/dreaming narrative, rock shelter, water source, grinding areas, and other historical sites/artefacts		✓
Determined areas under the *Native Title Act 1993* (Cth) (Ref. 361)		
Thalanyji 2 (WCD2008/003) Buurabalayji Thalanyji Aboriginal Corporation	✓	✓
Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People (WCD2019/016) Nganhurra Thanardi Garrbu Aboriginal Corporation, Yinggarda Aboriginal Corporation		✓
Claim areas under the *Native Title Act 1993* (Cth) (Ref. 364)		
Nhuwala Claim Group (WC2024/008) (sea claim) Yamatji Marlpa Aboriginal Corporation		✓
Thalanyji/Nhuwala People (WC2024/007)		✓

4.6.1 Ningaloo Coast

The Ningaloo Coast is located in WA adjacent to the East Indian Ocean. The area has a high level of terrestrial species endemism, and high marine species diversity and abundance (Ref. 457). The integration of the Ningaloo Reef and Exmouth Peninsula karst system as a cohesive limestone structure is at the heart of the natural heritage significance of the Ningaloo Coast (Ref. 160).

The marine portion of the World Heritage property contains a high diversity of habitats that includes lagoon, reef, open ocean, the continental slope, and the continental shelf (Ref. 457). Intertidal systems such as rocky shores, sandy beaches, estuaries, and mangroves are also present (Ref. 457). The most dominant

[7] Only Aboriginal Sites, being a place described under Section 5 of the *Aboriginal Heritage Act 1972* (WA), with a potential coastal and/or marine interface that intersect with the geographic extent of the EMBA (including areas of predicted shoreline loading) have been included. This is considered a conservative approach, as the heritage sites within the Department of Planning, Lands and Heritage (DPLH) spatial dataset (Ref. 212) include a buffer around sites to protect privacy regarding the location.

marine habitat is Ningaloo Reef, which sustains both tropical and temperate marine fauna and flora, including marine reptiles and mammals (Ref. 457). The Commonwealth Heritage place is valued as an important feeding area for the Whale Shark and migration route for the Humpback Whale (Ref. 167).

The main terrestrial feature of the Ningaloo Coast is the extensive karst system and network of underground caves and water courses of the Cape Range (Ref. 457). The karst system includes hundreds of separate features such as caves, dolines, and subterranean water bodies and supports a rich diversity of highly specialised subterranean species (Ref. 457). Above ground, the Cape Range Peninsula belongs to an arid ecoregion recognised for its high levels of species richness and endemism, particularly for birds and reptiles (Ref. 457).

In addition to the natural values of the Ningaloo Coast, Indigenous values are identified under the National Heritage listing (Ref. 160). Archaeological deposits in the rock shelters on Cape Range show First Nations people's sophisticated knowledge of marine resources between 35,000 and 17,000 years ago. The rock shelters are considered to provide the best evidence in Australia for the use of marine resources during the Pleistocene (Ref. 160).

4.6.2 Underwater cultural heritage

Australia's UCH is primarily protected under the UCH Act; this legislation protects archaeological (physical) UCH, including First Nations UCH, in Australian waters.

Under section 15 of the UCH Act, UCH is defined as "any trace of human existence that has a cultural, historical, or archaeological character, and is located underwater". Types of physical UCH protected may include sites, structures, buildings, artefacts, human or animal remains, vessels, aircraft, or other vehicles, together with their archaeological and natural context (Ref. 161). Intangible cultural heritage with no physical components is not protected under the UCH Act; however, it is noted that consideration of intangible cultural heritage can contribute to the understanding and potential identification of First Nations UCH that is eligible to be protected under the Act (Ref. 161).

Table 4-27 lists and Figure 4-45 illustrates the presence of historic (≥75 years old) shipwrecks and other shipwreck sites identified within the OA and EMBA. Within the OA, the historic shipwrecks include three sailing vessels—Vianen (1628), Wild Wave (1873) and Curlew (1911)—and one vessel of unknown type, Marietta (1905). No sunken aircraft, or other types or artefacts, were identified within the EMBA from the database searches.

Although outside the EMBA, evidence from offshore waters near Murujuga (Burrup Peninsula) and on Barrow Island are indicative of the historical and ongoing connection of First Nations people to the NWMR. Australia's first confirmed First Nations underwater archaeological sites were identified in 2020 in waters offshore from Murujuga (Burrup Peninsula) during the Deep History of Sea Country Project (Ref. 37). These findings confirmed an understanding that First Nations people would have lived on lands that are now submerged in water from rising seas after the last glacial maximum (LGM). Recent studies at Murujuga have demonstrated that archaeological material remains on the seabed, predating inundation by rising seas (Ref. 37; Ref. 355).

At the LGM sea level was ~125 m below present (Ref. 378) which coincides with the ancient coastline at 125 m depth KEF. Portions of the OA intersect this KEF and would have been dry land for a brief period (~1,000 years) during the history of Aboriginal occupation. In addition, the offshore component of the trunkline would

have also been on dry land and for much longer periods of time due to the increasing proximity to the coast.

Sea Country values (intangible values) may be identified through the consultation phases, although not protected under the UCH Act; however, it is noted that consideration of intangible cultural heritage can contribute to the understanding and potential identification of Aboriginal UCH that is eligible to be protected under the UCH Act (Ref. 161).

During this consultation, no specific Aboriginal UCH has been identified within the OA or the EMBA. The consultation undertaken during the preparation of this EP is summarised in Section 6 and appendix d.

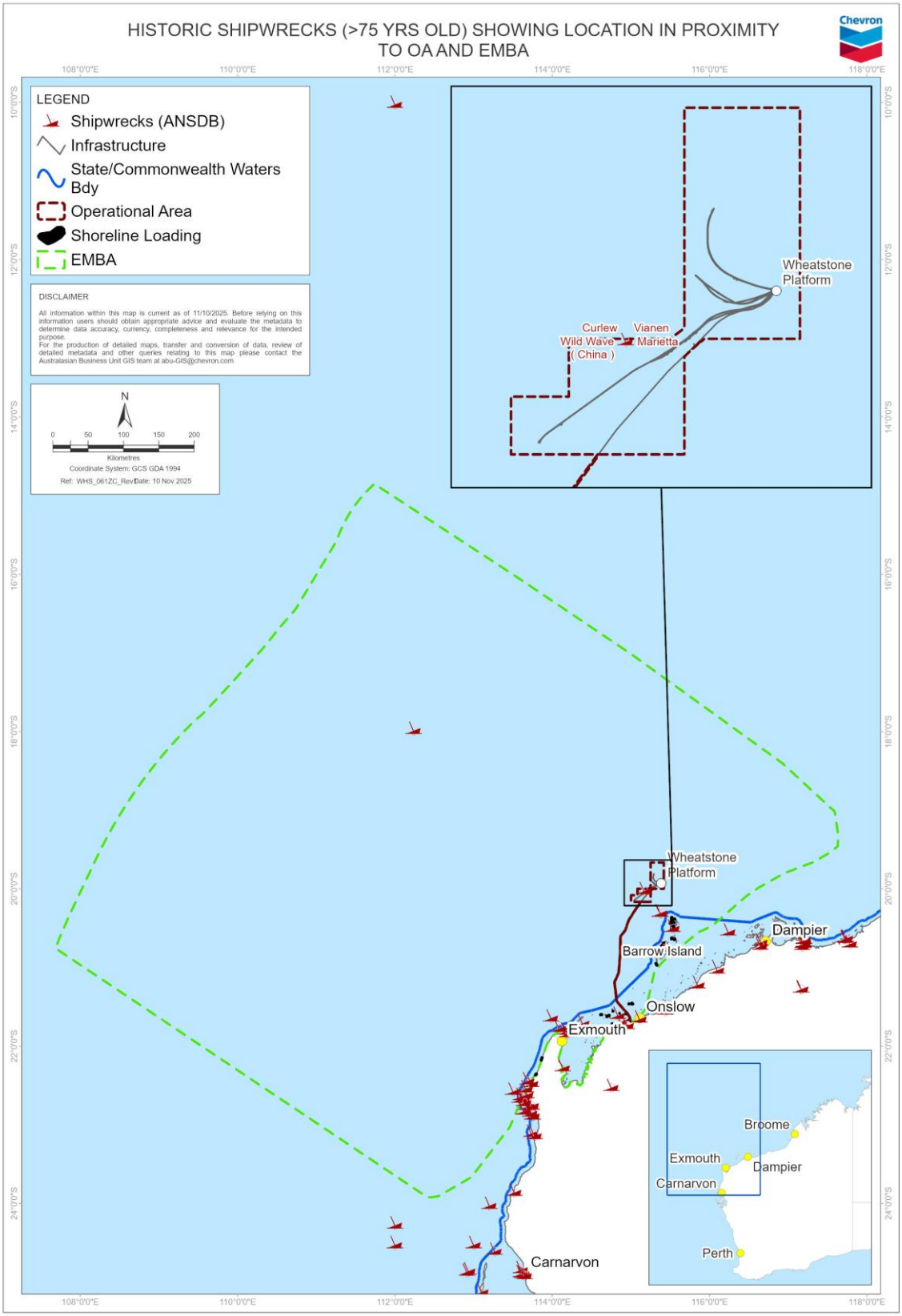


Figure 4-45: Historic shipwrecks (>75 years old) in proximity to OA and EMBA.

4.6.3 Native Title

Native Title recognises the rights and interests of Aboriginal and Torres Strait Islander people in land and waters according to their traditional laws and customs and is administered under the *Native Title Act 1993* (Cth).

A desktop review of the National Native Title Tribunal Database (Ref. 361) was undertaken to determine the presence of native title determinations or claims either within or intersecting the OA and EMBA. This review identified that native title determination WCD2008/003 intersected with the OA and that WCD2019/016 intersected with the EMBA.

In addition to the identified native title determinations, two active native title claims are in place that are located within the EMBA. One of these includes a sea claim associated with coastal waters adjacent to the OA (trunkline).

4.6.3.1 Native Title determination (WCD2008/003)

A Native Title determination (WCD2008/003) encompasses the land lying within the Ashburton River coastal plain, Urala, Yanrey, Emu Creek, Uaroo, Nanutarra, Cane River, Koordarrie and Minderoo (Ref. 311). The mainland portion of the OA intersects with this area as the trunkline enters shallow waters and proceeds onshore (Figure 4-6 and Figure 4-46).

The Thalanyji people received recognition as a Native Title holder over an area of 11,120 km2 in 2008. The determination area encompassed predominantly pastoral land (13 leases) located within the Shire of Ashburton with some in the vicinity of the Onslow town and port areas (Ref. 362) with the remaining area comprising formerly unallocated Crown land (Ref. 11). The Thalanyji people have maintained a physical presence in the determination area and have a continuing physical or spiritual involvement in that area (Ref. 46).

The relevant Prescribed Bodies Corporate (PBC) is Burrabalayji Thalanyji Aboriginal Corporation Registered Native Title Body Corporate (RNTBC) which was formed in 2008 following the WCD2008/003 native title determination (Ref. 11).

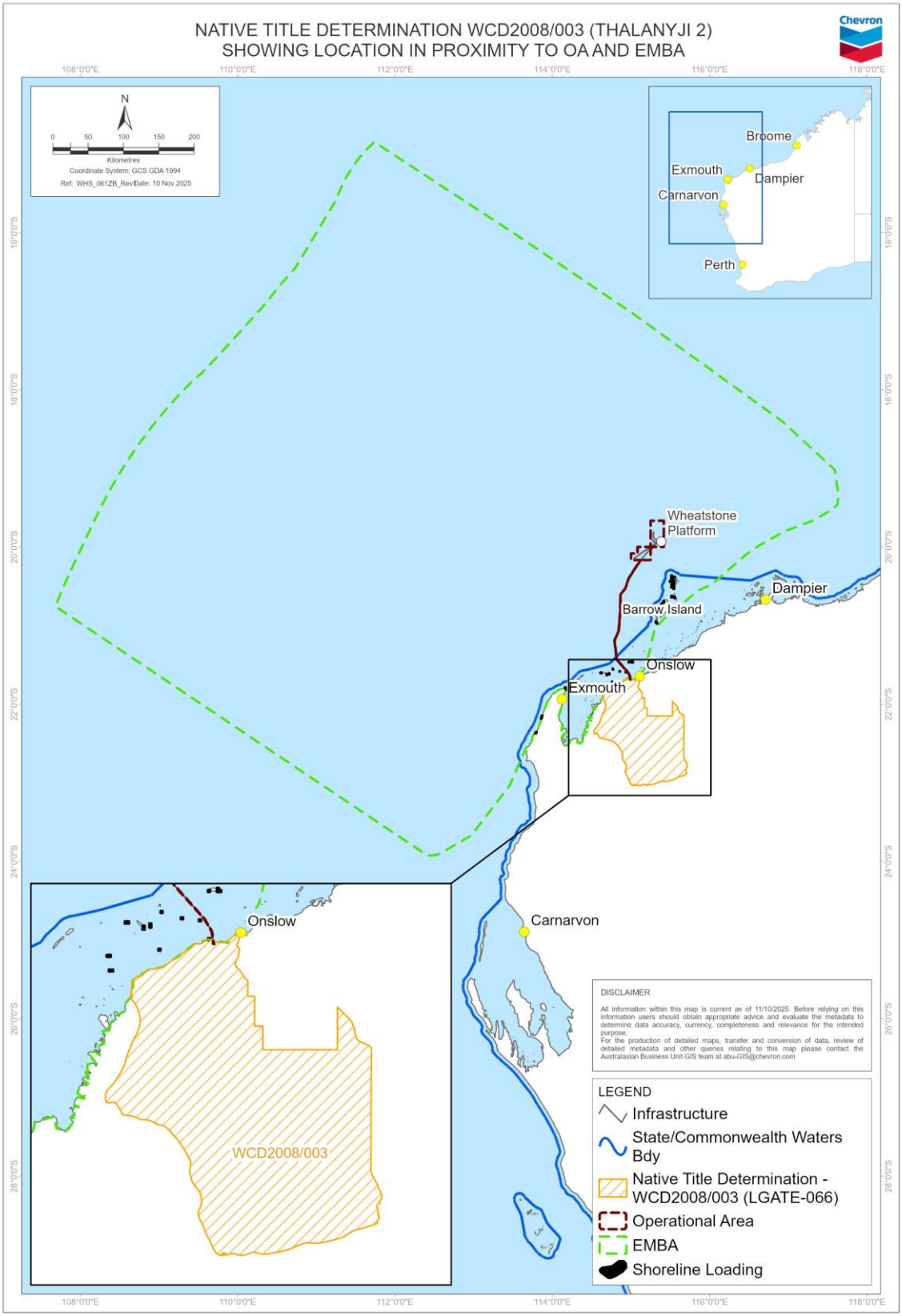


Figure 4-46: Native Title Determination WCD2008/003

4.6.3.2 Native Title determination (WCD2019/016)

A Native Title determination (WCD2019/016) extends over the Ningaloo Coast area and intersects the EMBA but not the OA. The Yinggarda, Baiyungu, and Thalanyji people received recognition as a Native Title holder over an area of 71,354 km^2. The determination area encompasses several pastoral leases, mining tenements, roads, and reserves, as well as portions of the Kennedy Range and Cape Range national parks, Ningaloo Marine Park, Lake MacLeod, and waters in the Exmouth Gulf and Ningaloo Marine Park (Ref. 505).

The Yinggarda, Baiyungu and Thalanyji people have each maintained a physical presence in their respective part of the determination area and have a continuing physical or spiritual involvement in that area (Ref. 505). The determination area contains places of special significance, such as cultural, spiritual and ceremonial sites and natural resources (Ref. 505).

The relevant Prescribed Bodies Corporate (PBC) is the Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) RNTBC (representing the Baiyungu, Thalanyji and Yinggarda people).

4.6.3.3 Native Title Claims WC2024/007 and WC2024/008

Two Native Title claims were lodged in November and December 2024 on behalf of the Thalanyji/Nhuwala People (WC2024/007) and the Nhuwala Claim Group (WC2024/008) (Ref. 364). These claims were accepted and are awaiting determination. The claim areas do not intersect the OA but do lie in close proximity and within the EMBA.

The claim areas lie adjacent to the existing Thalanyji Native Title determination (WCD2008/003) and encompass lands from Onslow to Cane River. In addition, islands off the coast of Onslow and an associated area of ocean bordered by Thevenard, Rosily, Airlie and Mangrove Islands have been included in the claim. Ashburton Island has also been included but the intervening stretch of water where the OA (trunkline) is located has not.

The onshore claim area encompasses equal parts unallocated Crown Land and pastoral leases with some conservation reserves/parks. Offshore islands and waters encompass both conservation reserves/parks and unallocated Crown Land. (Ref. 363, Ref. 365).

5 environmental impact and risk assessment methodology

This section provides a description of the methods used to identify and evaluate the environmental impacts and risks associated with the petroleum activities (as described in Section 3) and any potential emergency conditions associated with these activities. These methods support the environmental impact and risk assessment as required under Regulation 21(5) of the OPGGS(E)R.

The impact and risk assessment for this EP was undertaken in accordance with the CAPL's *ABU OE Risk Management Process* (Ref. 78) and using Chevron Corporation's Integrated Risk Prioritization Matrix (Table 5-1). This approach generally aligns with the processes outlined in ISO 31000:2018 *Risk management – Principles and guidelines* (Ref. 438) and the HB 203:2012 *Managing environment-related risk* (Ref. 436).

The impact and risk assessment process and evaluation involved consulting with environmental, health, safety, commissioning, start-up, operations, maintenance, engineering, and emergency response personnel. The impacts and risks considered and covered in this EP were identified and informed by:

- experience gained during the GFP
- expertise and experience of CAPL personnel involved in operations
- relevant persons consultation (Section 6).

5.1 Identification and description of the petroleum activity

All components of the petroleum activity and potential emergency conditions relevant to the scope of this EP were described and evaluated during the impact and risk assessment. The activity is described in detail in Section 3.

5.2 Identification of particular environmental values and sensitivities

The presence of environmental values and sensitivities within the EMBA is documented in Section 4. In accordance with regulation 21(3) of the OPGGS(E)R, the values and sensitivities include the following:

- the world heritage values of a declared World Heritage property within the meaning of the EPBC Act
- the national heritage values of a National Heritage place within the meaning of the EPBC Act
- the ecological character of a declared Ramsar wetland within the meaning of the EPBC Act
- the presence of a listed threatened species or listed threatened ecological community within the meaning of the EPBC Act
- the presence of a listed migratory species within the meaning of the EPBC Act
- any values and sensitivities that exist in, or in relation to, part or all of:
  - a Commonwealth marine area within the meaning of the EPBC Act
  - Commonwealth land within the meaning of the EPBC Act.

Because many protected, rare, or endangered fauna have the potential to transit through the EMBA, the habitat and/or temporal area that supports protected and endangered fauna (including areas defined as BIAs for these species) is considered the particular value or sensitivity.

5.3 Identification of relevant aspects

CAPL defines an aspect as an element of CAPL's activities, products, or services related to an operation that has the potential to interact with the environment at present or later (e.g. wastewater discharge, greenhouse gas emission, legacy environmental obligations).

After describing the petroleum activity, an assessment was carried out to identify potential interactions between the petroleum activity and the receiving environment. The outcomes of relevant persons consultation also contributed to this scoping process.

Note: Potential interactions with safety, health, and assets is outside the scope of this EP.

Environmental aspects categorised for use in the impact and risk assessment of this petroleum activity include:

- physical presence
- seabed or ground disturbance
- air emissions
- greenhouse gas emissions
- dust emissions
- light emissions
- underwater sound
- invasive marine pests or non-indigenous species
- planned discharges
- unplanned releases.

5.4 Identification of relevant environmental impacts and risks

Potential impacts and risks arising from the aspects were then identified during a scoping exercise and then evaluated in detail.

5.5 Evaluation of impacts and risks

5.5.1 Consequence

After identifying the aspects, and associated potential impacts and risks, the potential consequences were evaluated using the Integrated Risk Prioritization Matrix (Table 5-1). The consequence level is determined by considering:

- the spatial scale or extent of potential interactions within the receiving environment
- the nature of the receiving environment (within the spatial extent), including proximity to sensitive receptors, relative importance, and sensitivity or resilience to change
- the impact mechanisms (cause and effect) of the aspect within the receiving environment (e.g. persistence, toxicity, mobility, bioaccumulation potential)
- the duration and frequency of potential effects and time for recovery
- the potential degree of change relative to the existing environment or to acceptability criteria.

For aspects that have the potential to cause both impacts and risks, the highest level consequence was carried through the remainder of the assessment to ensure the most conservative analysis is presented.

Table 5-1: Chevron Corporation's Integrated Risk Prioritization Matrix

Likelihood Descriptions									
	Expected to occur	Likely	1	6	5	4	3	2	1
	Conditions may allow to occur	Occasional	2	7	6	5	4	3	2
	Exceptional conditions may allow to occur	Seldom	3	8	7	6	5	4	3
	Reasonable to expect will not occur	Unlikely	4	9	8	7	6	5	4
	Has occurred once or twice in the industry	Remote	5	10	9	8	7	6	5
	Rare or unheard of	Rare	6	10	10	9	8	7	6
Consequence Descriptions				6	5	4	3	2	1
				Incidental	Minor	Moderate	Major	Severe	Catastrophic
				Limited impact	Localised, short-term impact	Localised, long-term impact or widespread, short-term impact	Localised, persistent impact or widespread, long-term impact	Widespread, persistent impact or landscape-scale, long-term impact	Landscape-scale, persistent impact

5.5.2 Control Measures and ALARP

The process for identifying control measures depends on the 'as low as reasonably practicable' (ALARP) decision context set for that particular aspect. Regardless of the process, control measures are assigned in accordance with the defined environmental performance outcomes, with the objective to eliminate, prevent, reduce, or mitigate consequences associated with each identified environmental impact and risk.

5.5.2.1 ALARP Decision Context

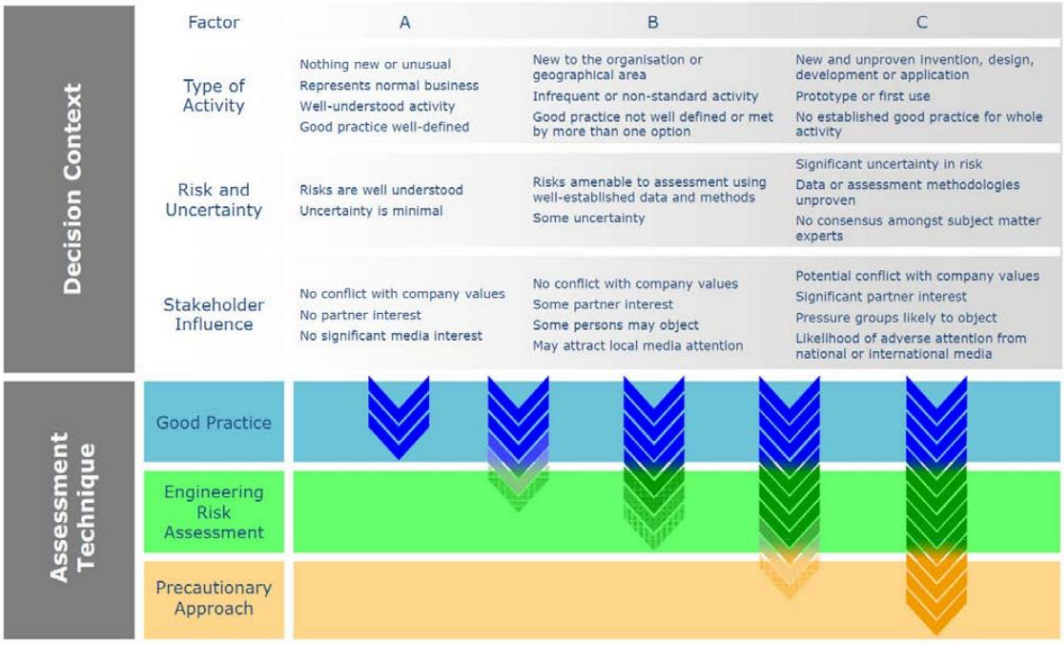
In alignment with NOPSEMA's ALARP guidance note (Ref. 371), CAPL has adapted the approach developed by Oil and Gas UK (OGUK) (Ref. 381) for use in an environmental context to determine the assessment technique required to demonstrate that impacts and risks are ALARP. Specifically, the framework considers the magnitude of impacts and risks along with these guiding factors:

- activity type
- risk and uncertainty
- stakeholder influence.

A Type A decision (Figure 5-1) is made for lower-order impacts and risks (Table 5-3) where they are relatively well understood, activities are well-practised, and there is no significant stakeholder interest. However, if good practice is not sufficiently well defined, additional assessment may be required. In addition, where an aspect associated with the activity is listed as either a key threat to a protected matter under a document made or implemented under the EPBC Act (such as recovery plans, conservation management plans, or a conservation advice), or identified as an aspect of concern to a listed conservation value under an EPBC Act marine bioregional plan, and can result in a credible impact or risk to these sensitivities, additional control consideration will be undertaken.

A Type B decision (Figure 5-1) is made for higher-order impacts and risks (Table 5-3) if there is greater uncertainty or complexity around the activity, and there are relevant concerns from stakeholders. In this instance, established good practice is not considered sufficient and further assessment is required to support the decision and ensure the risk is ALARP.

A Type C decision (Figure 5-1) typically involves sufficient complexity, higher-order impact and risks (Table 5-3), uncertainty, or stakeholder interest to require a precautionary approach. In this case, relevant good practice still has to be met, additional assessment is required, and the precautionary approach must be considered for those controls that only have a marginal cost benefit.



(Source: Ref. 371)

Figure 5-1: ALARP decision support framework

In accordance with the regulatory requirement to demonstrate that environmental impacts and risks are ALARP, CAPL has considered the above decision context in determining the level of assessment required. This is applied to each aspect described in Sections 7 and 8. The assessment techniques considered include:

- good practice
- engineering risk assessment
- precautionary approach.

5.5.2.2 Good practice

OGUK (Ref. 381) defines 'good practice' as:

> *The recognised risk management practices and measures that are used by competent organisations to manage well-understood hazards arising from their activities.*

Good practice can also be used as the generic term for those measures that are recognised as satisfying the law. For this EP, sources of good practice include:

- requirements from Australian legislation and regulations
- relevant Commonwealth government policies
- relevant Commonwealth government guidance
- relevant industry standards
- relevant international conventions.

If the ALARP technique is determined to be good practice, further assessment (an engineering risk assessment) is not required to identify additional controls. However, additional controls that provide a suitable environmental benefit for an insignificant cost have been identified.

5.5.2.3 Engineering risk assessment

All impacts and risks that require further assessment are subject to an engineering risk assessment. Based on the various approaches recommended by OGUK (Ref. 381), CAPL believes the methodology most suited to this activity is a comparative assessment of risks, costs, and environmental benefit. A cost–benefit analysis should show the balance between the risk benefit (or environmental benefit) and the cost of implementing the identified measure, with differentiation required such that the benefit of the risk-reduction measure can be seen and the reason for the benefit understood.

5.5.2.4 Precautionary Approach

After considering all available engineering and scientific evidence, OGUK (Ref. 381) state that if the assessment is insufficient, inconclusive, or uncertain, then a precautionary approach to hazard management is needed. A precautionary approach will mean that uncertain analysis is replaced by conservative assumptions that will result in control measures being more likely to be implemented.

That is, environmental considerations are expected to take precedence over economic considerations, meaning that a control measure that may reduce environmental impact is more likely to be implemented. In this decision context, the decision could have significant economic consequences to an organisation.

5.5.3 Likelihood

For environmental impacts (where there is a planned emission or discharge resulting in a known change to the environment) likelihood is not considered.

For risks where the aspect or event may lead to environmental impacts under certain circumstances, the likelihood (probability) of the defined consequence occurring is determined. The likelihood is considered on the assumption that all control measures are in place. The likelihood of a consequence occurring was identified using one of the six likelihood categories shown in Table 5-1.

5.5.4 Quantification of the level of risk

The Integrated Risk Prioritization Matrix (Table 5-1) was applied during an environmental risk assessment workshop. This matrix uses consequence and likelihood rankings of 1 to 6, which when combined, result in a risk level between 1 (highest risk) and 10 (lowest risk). Risk assessment outcomes are based solely on assessment of risk to the environment.

5.6 Impact and risk acceptance criteria

NOPSEMA provides guidance on demonstrating that impacts and risks will be of an ‘acceptable level’ (Ref. 369). This guidance indicates that an acceptable level is the level of impact or risk to the environment that may be considered broadly acceptable with regard to all relevant considerations, including:

- principles of ecologically sustainable development (ESD)
- legislative and other requirements (including laws, policies, standards, conventions)
- matters protected under Part 3 of the EPBC Act, consistent with relevant policies, guidelines, threatened species recovery plans, management plans, management principles etc.

- internal context (titleholder policy, culture, processes, standards and systems)
- external context (existing environment, relevant persons consultation).

5.6.1 Principles of ESD and precautionary principle

The principles of ESD are considered in Table 5-2 in relation to acceptability evaluations.

Under the EPBC Act, the Minister must also take into account the precautionary principle in determining whether or not to approve the taking of an action. The precautionary principle (Section 391(2) of the EPBC Act) is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there may be threats of serious or irreversible environmental damage.

Table 5-2: Principles of ESD in relation to petroleum activity acceptability evaluations

Principles of ESD	How they have been applied
(a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social, and equitable considerations	CAPL's impact and risk assessment process integrates long-term and short-term economic, environmental, social, and equitable considerations. This is demonstrated through the Integrated Risk Prioritization Matrix (Table 5-1), which includes provision for understanding the long-term and short-term impacts associated with its activities, and the ALARP process, which balances the economic cost against environmental benefit. As this principle is inherently met by applying the EP assessment process, it is not considered separately for each evaluation.
(b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation	Consider if there is serious or irreversible environmental damage (i.e. consequence level between Major [3] and Catastrophic [1]). If so, assess whether there is significant uncertainty associated with the aspect.
(c) the principle of inter-generational equity – that the present generation should ensure that the health, diversity, and productivity of the environment is maintained or enhanced for the benefit of future generations	The risk assessment methodology ensures that impacts and risks are reduced to levels that are considered ALARP. If the impacts and risk are determined to be serious or irreversible, the precautionary principle is implemented to ensure that risks are managed to ensure that the environment is maintained for the benefit of future generations.
(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making	Evaluate if there is the potential to affect biological diversity and ecological integrity.
(e) improved valuation, pricing, and incentive mechanisms should be promoted	Not considered relevant for petroleum activity acceptability demonstrations.

5.6.2 Defining an acceptable level of impact and risk

In alignment with NOPSEMA's ALARP Guidance Note (Ref. 371), CAPL has applied the approach that lower-order environmental impacts or risks (Table 5-3) assessed as Decision Context A are 'broadly acceptable', while higher-order environmental impacts or risks determined to be Decision Context B or C require

further evaluation against a defined acceptable level because they are not inherently 'broadly acceptable'. However, in alignment with NOPSEMA's decision making guidance (Ref. 369) even where the impact or risk is evaluated as being a lower-order impact or risk, but the aspect associated with the activity is listed as a threat to a protected matter under a document made or implemented under the EPBC Act, or identified as an aspect of concern to a listed conservation value under an EPBC Act Marine Bioregional Plans, and can result in a credible impact or risk, CAPL will define an acceptable level of impact and risk in accordance with a document made or implemented under the EPBC Act.

Table 5-3: CAPL definition of lower- and higher-order impacts and risks

Magnitude	Impacts	Risk	Decision context
Lower-order	Consequence Level: 4–6	Risk Level: 7–10	A
Higher-order	Consequence Level: 1–3	Risk Level: 1–6	B or C

CAPL will considers these types of documents when defining the acceptable level of impact or risk:

- bioregional plans
- AMP plans
- conservation advice
- recovery plans
- government guidelines.

The objectives of the documents are identified and, having regard for the described activity, CAPL will set an acceptable level of impact that aligns with these objectives. Where the impact arising from the activity is inconsistent with the defined level (or objectives of the relevant documents), it is unacceptable.

5.6.3 Summary of acceptance criteria

Table 5-4 outlines the criteria that CAPL used to demonstrate that impacts and risks from each identified aspect are acceptable.

Table 5-4: Acceptability criteria

Acceptability Test	
Principles of ESD	Is there the potential to affect biological diversity and ecological integrity? Do activities have the potential to result in permanent/irreversible, medium-large scale, and/or moderate-high intensity environmental damage?
	If yes: Is there significant scientific uncertainty associated with the aspect?
	If yes: Are there additional measures to prevent degradation of the environment from this aspect?
Relevant environmental legislation and other requirements	Confirm that impact and risk management is consistent with relevant Australian environmental management laws and other regulatory / statutory requirements.
Internal context	Confirm that all good practice control measures were identified for this aspect through CAPL's management systems and that impact and risk management is consistent with company policy, culture, and standards.

Acceptability Test	
External context	What objections and claims regarding this aspect were made, and how were they considered / addressed?
Defined acceptable level	Is the impact and risk broadly acceptable (i.e. Decision Context A)?
	If no: For higher-order environmental impacts and risks (Decision Context B or C), what is the defined level of impact, and does the activity meet this level?

5.7 Environmental performance outcomes, standards, and measurement criteria

Environmental performance outcomes, performance standards, and measurement criteria were defined to address the environmental impacts and risks identified during the risk assessment.

CAPL is committed to conducting activities associated with the petroleum activity in an environmentally responsible manner and aims to implement best practice environmental management as part of a program of continual improvement to reduce impacts and risks to ALARP. CAPL defines environmental performance outcomes, standards, and measurement criteria that relate to managing the identified environmental risks as:

- **Environmental performance outcomes**—a measurable level of performance required for the management of environmental aspects of an activity to ensure that environmental impacts and risks will be of an acceptable level
- **Environmental performance standards**—a statement of the performance required of a control measure
  - These statements will consider the effectiveness of the control measures, and, in accordance with NOPSEMA's decision making guidance (Ref. 369), effectiveness will be considered with regards to the controls' functionality, availability, reliability, survivability, independence, and compatibility with other control measures
- **Measurement criteria**—compliance and assurance statement or records that detail how CAPL enacts the outlined performance standard; these are used to determine whether the environmental performance outcomes and standards were met and whether the implementation strategy was complied with. If no practicable quantitative target exists, a qualitative criterion is set.

For the purposes of this EP, "environmental performance outcome" is to be interpretated as being equivalent to an "environmental performance objective" as defined under the PSLER and PPER.

6 relevant persons consultation

This section provides a description of the methods used, and outcomes of, consultation with relevant authorities, persons, or organisations (a relevant person) undertaken during the preparation of this EP, as required under regulation 25 of the OPGGS(E)R.

Ongoing consultation, as required under regulation 22(15) of the OPGGS(E)R, is described in Section 9.3.4.1.

6.1 Purpose

Regulation 25 of the OPGGS(E)R allows the titleholder to properly understand all the environmental impacts and risks of the petroleum activity and enables the titleholder to refine or change the control measures by taking into account the information acquired from relevant persons through consultations. Recent judicial consideration of regulation 25 assists in understanding the purpose of the consultation required under the provision:

> *"Regulation 25, like most statutory consultation provisions, imposes an obligation that must be capable of practicable and reasonable discharge by the person upon whom it is imposed. Consultation is a "real world" activity, with specific purposes. Here, 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."* [8]

The consultation process should also inform the titleholder's understanding of the environment, including (amongst other things) people and communities, the heritage value of places, and their social and cultural features which may be affected by a titleholder's proposed activities (Ref. 367). The purpose of consultation is also to:

- identify the social and cultural features of communities within the ecosystem
- inform the control measures to eliminate, reduce and mitigate impacts and risks to those socio-cultural values and sensitivities in response to relevant persons concerns
- demonstrate to NOPSEMA that consultation has been carried out to inform NOPSEMA of relevant persons' identities, the nature of the consultation, and that the control measures adopted are both 'appropriate' and comply with legislation (Ref. 372 at paragraphs 55–57, and Ref. 373 at paragraph 48).

[8] Paragraph 89 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 2). Note: The regulation number in the above text has been revised to reflect the OPGGS(E)R 2023, from the original Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC judgement transcript.

In particular, the details of the environmental impacts and risks of the activities cannot be ascertained unless the environment that may be affected by the activity is known, which includes an understanding of the social, economic and cultural features of the environment (Ref. 159 at paragraph 11).

In essence, the purpose of consultation is to enhance environment plans through the incorporation of input from relevant persons during consultation.

Regulation 25 establishes an obligation on titleholders to carry out consultation with relevant persons during preparation of an EP, and this obligation must be discharged prior to submitting an EP to NOPSEMA (Ref. 367).

Consultation is undertaken in the course of preparing an EP (Ref. 232). Once consultation has been closed prior finalising and submitting an EP, further consultation (including consultation during the assessment of the EP) is considered as contributing to discharging the ongoing consultation obligations in regulation 22(15) (see Section 9.3.4). This is because if the EP is in the assessment phase, any further consultation is no longer 'in the course of preparing an EP' for the purposes of regulation 25.

6.2 Consistency with regulatory guidance

The consultation design for preparation of this EP was undertaken in accordance with CAPL's *Stakeholder Engagement and Issues Management Process: ABU Standardised OE Process* (Ref. 75) and further guided by:

- NOPSEMA's *Environment plan decision making guideline* (Ref. 369)
- NOPSEMA's *Environment plan content requirements guidance note* (Ref. 372)
- NOPSEMA's *Consultation in the course of preparing an environment plan guideline* (Ref. 367)
- NOPSEMA's *Consultation with Commonwealth agencies with responsibilities in the marine area guideline* (Ref. 368)
- NOPSEMA's *Petroleum activities and Australian Marine Parks guidance note* (Ref. 373)
- Full Court of the Federal Court of Australia's decision in *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 233)
- Colvin J of the Federal Court in *Cooper v National Offshore Petroleum and Safety Management Authority* [2023] FCA 1112 (Ref. 231)
- Colvin J of the Federal Court in *Cooper v National Offshore Petroleum and Safety Management Authority (No 2)* [2023] FCA 1158 (Ref. 232)
- Commonwealth of Australia's *Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999* (Ref. 159)
- Government of Western Australia's *Consultation policy for Section 18 application* (Ref. 256)
- WA Department of Energy, Mines, Industry Regulation and Safety (DMIRS) Guideline for the Development of Petroleum, Geothermal and Pipeline Environment Plans in Western Australia (Ref. 195)
- Australian Fisheries Management Authority's (AFMA) Petroleum industry consultation with the commercial fishing industry (Ref. 9)

- Western Australian Fishing Industry Council's (WAFIC) *Oil & Gas Consultation Approach for Unplanned Events* (Ref. 470)
- DPIRDs *Guidance statement for oil and gas industry consultation with the Department of Fisheries* (Ref. 203)
- WA Department of Transport's (DoT) *Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements* (Ref. 206).

6.2.1 Consultation principles

Consistent with NOPSEMA's *Consultation in the course of preparing an environment plan guideline* (Ref. 367), CAPL conducts consultation consistently with the following key principles:

- **Effective**: CAPL as titleholder is responsible for running an effective consultation process that meets the OPGGS(E)R
- **Timely**: sufficient time will be allocated for consultation and for the provision of sufficient information to relevant persons. Relevant persons engagement is encouraged to take place early during the development of an EP with the timing and frequency guided by the nature and scale of the petroleum activity, environmental risks and impacts of the activity, EMBA, and co-design of consultation with relevant persons
- **Communication**: titleholders are responsible for letting potential relevant persons know if they may be affected by an activity, giving relevant persons an opportunity to identify as such, and the process for making comments, and for providing sufficient information (including information that is accurate and relevant). Relevant persons are expected to identify their function, activity or interest that may be affected, communicate their requirements and availability regarding consultation co-design, and provide comment on how their function, activity or interest may be affected. Communication with relevant persons should be open, accurate, accessible, clearly-defined and two-way. Relevant objections and claims from relevant persons must be used to inform risk assessments and control measures
- **Transparent and accountable**: the process and outcomes of relevant persons engagement should, wherever possible, be open and transparent. NOPSEMA will receive all copies of consultation correspondence (or in the case of face-to-face consultation, then consultation summaries or meeting minutes or equivalent) in the EP. CAPL will respect cultural concerns in providing copies of consultation correspondence in the EP, including engaging with NOPSEMA to share gender-specific information with the appropriate gender and not sharing culturally sensitive information at the relevant person's request. CAPL is accountable for ensuring that the EP complies with EP acceptance criteria in regulation 34 so that NOPSEMA can be reasonably satisfied that the EP should be accepted under regulation 33.
- **Clear and sufficient**: sufficient information must be provided to relevant persons, and it should be simple, clear, and accurate. CAPL should avoid providing unnecessarily detailed and technical information unless of particular relevance to a relevant person (e.g. other titleholder) or requested by the relevant person. CAPL must give relevant persons sufficient time to respond to requests for consultation and provide comment on the information provided.

Relevant persons have a right to request additional information in order to determine how they might be affected.

- **Collaboration**: a collaborative approach is key to effective engagement, and may include working with representative organisations to help reduce 'consultation fatigue', and relevant persons working with industry to provide evidence of how their function, interest, or activities may be affected.
- **Inclusiveness:** identify and involve relevant persons early and throughout the process.
- **Integrity:** engagement with relevant persons should aim to establish and foster mutual trust and respect (even in cases where relevant persons oppose a petroleum activity).
- **Scalability:** consultation should be scalable based on the nature and scale of the petroleum activity, EMBA, the impacts and risks of the activity, the likelihood of the risks, and how familiar relevant persons are with petroleum activities based on past consultation on similar petroleum activities (e.g. location).

6.2.2 Relevant person

In accordance with regulation 25(1) of the OPGGS(E)R, a relevant person is defined as:

- regulation 25(1)(a)—each department or agency of the Commonwealth to which the activities to be carried out under the EP, or the revision of the EP, may be relevant
- regulation 25(1)(b)—if the plan relates to activities in the offshore area of a State—the Department of the responsible State Minister
- regulation 25(1)(c)—if the plan relates to activities in the Principal Northern Territory offshore area—the Department of the responsible Northern Territory Minister
- regulation 25(1)(d)—a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan
- regulation 25(1)(e)—any other person or organisation that the titleholder considers relevant.

Following the direction given by the Full Court of the Federal Court in *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 233), and subsequent NOPSEMA guidance (Ref. 372), it is clear that the phrase "functions, interests or activities" stated in regulation 25(1)(d) should be broadly construed[9]on the basis that a broad construction best promotes the objects of the OPGGS(E)R. In *Santos NA Barossa Pty Ltd v Tipakalippa*, the Court construed the following terms used in regulation 25(1)(d) as follows:

- **functions**—a power or duty to do something.[10]
- **interests**—in accordance with the accepted concept of "interest" in other areas of public administrative law, and including "any interest possessed by an

[9] Paragraph 51 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 233).

[10] Paragraph 60 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 233).

individual whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation".[11]

- **activities**—broadly and is broader than the definition of 'activity' in regulation 5 of the OPGGS(E)R and is likely directed to what the relevant person is already doing.[12]

Persons or organisations are considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R if their functions, interests or activities may be affected by the petroleum activity to be carried out under the EP. CAPL's approach has been to take a broad interpretation of "function, interest, and activity" and has screened in persons as potential relevance and contacted them to advise whether that individual or organization identifies themselves as a relevant person.

Where interests are held communally, CAPL has made a decisional choice to consult with representative bodies (Ref. 233 at paragraphs 96–102) and has sought to do so through meetings (Ref. 233 at paragraph 104). CAPL has sought to provide sufficient information to individuals who are relevant persons by providing information to representative bodies for dissemination with members and by attending meetings with group members (Ref. 233 at paragraph 47) and CAPL has also sought to identify those representative body organisations themselves as relevant persons (Ref. 233 at paragraph 48). As documented in the summary of consultation (appendix d), CAPL has asked these representative bodies if there are persons outside of the individuals they represent who may be relevant persons for the purposes of consultation to endeavour to make all necessary efforts to identify relevant persons.

6.2.3 Consultation co-design

Consultation co-design includes design of type of information, method of engagement, frequency of meetings and relationship-building (and may also include a relevant person determining they do not want to participate in consultation). As outlined above in Section 6, the purpose of consultation is to enhance EPs through input from relevant persons through enabling a better understanding of the social, economic and cultural features of the environment. Therefore, those relevant persons whose functions, interests, and activities are likely to be affected by planned activities are the focus for consultation as their input is most critical and relevant to enhancing the EP.

The consultation design is reviewed on a case-by-case basis to incorporate any feedback from relevant persons regarding the type of information or method of engagement that is preferred to ensure that the purpose of the consultation is achieved. The consultation method of engagement may change over time as the nature of the relationship evolves, the relevant person's understanding of petroleum activities matures, and the information provided by the relevant person is incorporated into enhanced EPs and is carried forward in subsequent submissions.

Face-to-face consultation is CAPL's preferred methodology, however it may be necessary to undertake consultation in writing where this is the relevant person's preferred methodology or where circumstances dictate.

Where it is agreed that it is appropriate by the parties (CAPL and relevant person), CAPL and relevant person will work together to develop an engagement plan that sets out the arrangements for consultation, reflecting the outcomes of the co-design

[11] Paragraphs 63 and 65 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 233).

[12] Paragraphs 58 and 59 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 233).

process that has taken place. The engagement plan provides a structured approach to building a relationship with the relevant person and forming a partnership based on consultations, annual planning meetings, time on Country and work in progress meetings.

Where it is agreed as appropriate by the parties, CAPL enters into consultation agreements with relevant persons. These agreements establish a framework for consultation and engagement, including agreed costs and fees associated with consultation engagements. CAPL considers Traditional Owner relevant persons to be Aboriginal cultural heritage subject matter experts and accordingly reimburses them for their time and, where necessary, third-party assistance on technical matters.

6.2.4 Sufficient information

Under regulation 25(2) of the OPGGS(E)R and NOPSEMA's guidelines (Ref. 369; Ref. 367), for the purpose of consultation, the titleholder must provide each relevant person with sufficient information to enable them to make an informed assessment of the possible consequences of the petroleum activity on their functions, interests, or activities.

The base level of information provided to all relevant persons whose functions, interests or activities may be affected by the environmental impacts or risks of the activity includes:

- maps of the proposed petroleum activity location and the associated EMBA
- a summary of the petroleum activity, including indicative schedule and duration
- a summary of the potential impacts and risks as identified by CAPL
- a preliminary assessment of how the potential impacts and risks may impact the environmental and socio-cultural values and sensitivities
- a summary of the proposed control measures that CAPL has adopted to reduce the predicted consequence and/or likelihood of the potential impact or risk.

This base level of information is the minimum required for relevant persons to make an informed assessment of the potential consequences to the persons' functions, interest, or activity because it informs the relevant person of:

- the activity (including spatial and timing information that may intersect with their function, interest, or activity)
- the impacts and risks of the petroleum activity (including the spatial extent of the Hydrocarbon EMBA and intersection with BIAs) to allow an assessment of how that may impact or create a risk to the relevant persons' functions, interests, or activities
- the control measures to reduce the impacts or risks of the petroleum activity to environmental and socio-cultural values and sensitivities.

Additional information may be provided to reflect the information requested through co-design of consultation, to better enable them to provide feedback related to potential interactions with their function, interest, or activity, or in response to their objection or claim. This includes verbal information and answers to questions during consultation discussions.

The following is a summary of materials released as part of the consultation for this EP revision (to include the operation of the Julimar-Brunello hydrocarbon system):

- CAPL issued an information sheet to identified relevant persons in September 2025; this information sheet included information about the proposed petroleum activity, potential impacts and risks, control measures, and included maps showing Hydrocarbon EMBA
- CAPL published information regarding the proposed activity to the Online Consultation Hub (https://australia.chevron.com/our-businesses/upcoming-activities) on 4 September 2025 and emailed the link to relevant persons; the Online Consultation Hub contains all the base level of information as described above
- CAPL published notices in The Australian and The West Australian on 8 September 2025; in the Pilbara News, Mid-West Times, and Northwest Telegraph on 10 September 2025, in Business News on 22 September 2025, and National Indigenous Times September 2025 edition
- CAPL published a LinkedIn and Instagram post on 5 September 2025 with a link to the Online Consultation Hub
- CAPL developed posters, presentation materials, and handouts for use and distribution in face-to-face meetings
- CAPL offered face-to-face meetings with relevant persons (see appendix d)

A copy of the consultation material is included in appendix c. A summary of the consultation strategy and information provided to each category of relevant persons is included in Table 6-1.

Table 6-1: Consultation strategy and information provided to relevant persons

Category of persons or organisations	Consultation strategy and information provided
Commercial fishery licence holders and/or representative bodies	• initial correspondence with WAFIC to provide base level information on the petroleum activity and link to the CAPL Online Consultation Hub • follow up correspondence with WAFIC to confirm the commercial fishery licence holders to be consulted • in consultation with WAFIC, determine the level of consultation required and whether tailored consultation material needs to be developed • provision of consultation material to WAFIC for distribution to relevant commercial fishery licence holders • WAFIC provides any feedback received to CAPL, and CAPL provides information to respond to commercial fishery licence holders; any feedback received is considered in the development of the EP • where a commercial fishery that is not represented by WAFIC has been determined as relevant, the representative body is provided consultation material and feedback is requested • after a reasonable period has been provided to consider the consultation information (as outlined in Section 6.2.5), CAPL will confirm with WAFIC or the relevant industry body (as required) whether further consultation is required • ongoing consultation with follow up correspondence, phone calls and meetings as required.
First Nations people and/or representative bodies	• initial correspondence with relevant First Nations representative bodies to request a meeting with the board, Elders, or other relevant persons

Category of persons or organisations	Consultation strategy and information provided
	• provision of base level information on the petroleum activity and link to the CAPL Online Consultation Hub as a precursor to face-to-face meetings • initial face-to-face meeting held using bespoke consultation material, including posters, presentations and verbal discussions – a key objective of the initial meeting is to co-design the consultation strategy going forward and to determine if there are additional relevant persons not present at the meeting who should be informed and consulted with • follow up emails, phone calls and meetings, as required, to ensure the functions, interests and activities of First Nations peoples' have been identified and to gain an understanding of cultural values and sensitivities in the Hydrocarbon EMBA; any feedback received is considered in the development of the EP • site visits on Country with First Nations people may be conducted as required • after a reasonable period has been provided to consider the consultation information (as outlined in Section 6.2.5), CAPL provides the First Nations people and/or representative bodies a summary of consultation undertaken to date and requests agreement on the summary • ongoing consultation with follow up correspondence, phone calls and meetings as required.
Environmental non–government organisations (ENGOs)	• provision of base level information on the petroleum activity and link to the CAPL Online Consultation Hub via email with a request for feedback and an offer to meet face-to-face • where consultation guidance material is available (as outlined in Section 6.2.4), CAPL tailors its consultation to meet the requirements of the guidance material • local community / town meetings may be held using presentations, posters and verbal discussions as required • any feedback received is responded to and considered in the development of the EP. • after a reasonable period has been provided to consider the consultation information (as outlined in Section 6.2.5), CAPL will determine whether further consultation is required • ongoing consultation with follow up correspondence, phone calls and meetings as required.
Government departments or agencies	
Other petroleum titleholders / commercial industries	
Tourism and recreation operators	
WA World Heritage advisory committees	
Self-identified and other relevant persons	

6.2.5 Reasonable period

Under regulation 25(3) of the OPGGS(E)R and NOPSEMA's guidelines (Ref. 369; Ref. 367), relevant persons must be provided with a reasonable period for the consultation to occur, allowing the relevant person to make an informed assessment of the possible consequences of the proposed petroleum activity on their functions, interests, or activities and respond to the titleholder. "Reasonable period" was not defined by the Full Federal Court in *Tipakalippa* (Ref. 233), however, consistent with the Court's analysis in the "NTA authorities" Section of the judgment, CAPL has sought to identify existing guidelines and practices to help inform what a "reasonable period" may constitute for the relevant person.

Guidance on consultation with Commonwealth departments or agencies indicates that agencies will provide an initial response to consultation requests within 10 business days (Ref. 369) or up to eight weeks (Ref. 206).

Available guidance regarding consultation with State departments or agencies indicates a reasonable period for standard activities is no less than 20 business days (Ref. 203), and up to six weeks (Ref. 206).

Guidance taken from the *Aboriginal Cultural Heritage Act 2021—Consultation Guidelines* (Ref. 181) 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). More recent policy (Ref. 129) is less prescriptive and talks to "allowing sufficient time for genuine consultation to occur. This may include using multiple contact methods (e.g. phone and email) and providing a reasonable time for responses". Based on consultation undertaken to date feedback from First Nations peoples is that 6-12 weeks is a reasonable period of time depending on the nature and scale of the activity. This is also largely consistent with the 'low impact activities' procedure under the Native Title Act 1993 (Cth) which allows for between two and four months for notification of a low impact future act and receipt of objections.

A 6 week consultation period was determined to be appropriate by CAPL for this EP revision (to include the operation of the Julimar-Brunello hydrocarbon system) given the nature and scale of the EP and that Relevant Persons had also been recently consulted on this activity by Woodside for the accepted Julimar Operations EP. Relevant Persons input from this previous consultation has been considered and incorporated into this environment plan where appropriate.

CAPL provided all relevant persons an initial period following the issue of consultation materials to respond. Where no response was received, CAPL followed up with each relevant person (via phone, email, or in person) to enquire if there was any clarifications or additional information required to aid their assessment of any interactions with their functions, interests, or activities.

6.2.6 Sensitive information

Regulation 25(4) of the OPGGS(E)R requires that "[t]he titleholder must tell each relevant person the titleholder consults that:

a) the relevant person may request that particular information the relevant person provides in the consultation not be published; and

b) information subject to such a request is not to be published under this Part".

Under regulation 26(8) of the OPGGS(E)R "all sensitive information (if any) in an environment plan, and the full text of any response by a relevant person to consultation under regulation 25 in the course of preparation of the plan, must be contained in the sensitive information part of the plan and not anywhere else in the plan".

In accordance with regulations 26(8) of the OPGGS(E)R, the full text of all responses received from relevant persons, as well as sensitive information, are included in the sensitive information report provided separately to NOPSEMA to preserve the privacy of those persons or organisations consulted. Specifically, the sensitive information includes records and responses considered to contain personal information (as defined by the *Privacy Act 1988* [Cth]) or information given by a relevant person in consultation under regulation 25 of the OPGGS(E)R in the course of preparing this EP that relevant persons requested not to be published.

6.2.7 Identification of relevant persons

In accordance with NOPSEMA's guideline for consultation (Ref. 367), titleholders must identify who is a relevant person and the rationale used to determine that identification as a relevant person. CAPL has a process to identify and 'screen in' potential relevant persons and also provides for self-identification.

CAPL achieved this in two ways, first by an assessment process supported by research and historical consultation and advice, secondly by providing an opportunity for those who may not have been identified through the assessment process to self-identify.

Identifying relevant persons requires an assessment of:

- the petroleum activity (Section 3)
- the environment in which the petroleum activity is being undertaken, including:
  - environmental, socio-economic, and cultural values and sensitivities of the environment
  - the spatial extent of the Hydrocarbon EMBA
  - any intersection between the Hydrocarbon EMBA and BIAs
- the possible environmental impacts and risks of the petroleum activity and the possible consequences on the functions, interests, activities of relevant persons.

The process undertaken by CAPL for the identification of relevant persons:

- identified what types of authorities, persons, or organisations may be relevant to the values and sensitivities present within the Hydrocarbon EMBA
- reviewed the functions, interests, or activities of the types of organisations or individuals identified, and determined if the functions, interests, or activities of organisations or individuals may be affected by the petroleum activity through multiple lines of evidence:
- existing industry guidance (e.g. Ref. 368; Ref. 373; Ref. 9; Ref. 470; Ref. 203; Ref. 206)
- online searches
- review of publicly available databases or registers (e.g. access and use authorisations within AMPs, DPIRD's register of fishery licence holders)
- review of relevant persons consulted by Woodside for the accepted Julimar Operations EP (accepted 7 July 2025).
- historical consultation and advice
  - CAPL's previous identification of relevant persons for consultation history for an extensive history of multiple prior petroleum activities on the NWS within EMBAs in the same geographic area
  - Advice from representative industry organisations, community organisations and representative organisations for Traditional Custodians.

The outcomes of this process are detailed in Table 6-2, which lists the relevant persons that were identified for this EP, and CAPL's reasoning for determining their inclusion.

In addition to this process, individuals and organisations were also given the opportunity to self-identify as relevant persons, which is further outlined in Section 6.2.7.1. Where individuals or organisations have been identified as relevant persons for previous petroleum activities, but fall outside the EMBA and are not relevant persons for this activity under regulation 25(1)(d), CAPL may consider them relevant persons under regulation 25(1)(e) (see Section 6.3.5).

Table 6-2: Potential authority, persons, or organisations that have functions, interests, or activities that are associated with environmental values or sensitivities present within the Hydrocarbon EMBA

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
Physical presence – other marine users • Hydrocarbon system - permanent presence of the subsea hydrocarbon system • Platform - permanent presence of the platform • field support—temporary (short-term) presence of vessels	Commercial shipping	Interest and activity – Commercial shipping	Temporary presence of vessels has the potential to result in disruption to other marine users	Commercial vessel traffic density within the OA is relatively low, including the section that intersects one of AMSA's north-west coast shipping fairways. Therefore, the temporary presence of the vessels within the OA are not expected to have consequences for the functions, interests or activities of commercial shipping. Notwithstanding, there may be an intersection with commercial shipping activities within the OA.	Commercial shipping industry Government departments or agencies
	Commercial fishing	Interest and activity – Commercial fishing	Potential for unplanned interactions between other marine users with the subsea infrastructure Temporary presence of vessels has the potential to result in disruption to other marine users	The subsea hydrocarbon infrastructure associated with this activity is contained wholly within the OA. Subsea infrastructure has been in place within the OA since 2015 (Wheatstone and Iago) and 2026 (Julimar-Brunello), and to date, no incidences of commercial fishing activities interacting with the infrastructure has been communicated to CAPL. Although Commonwealth and State fisheries are present, the level of fishing effort within the OA is typically low (refer to Section 4.4.1). The temporary presence of vessels within the OA is not expected to significantly affect commercial fishers, however it is acknowledged there may be an intersection with commercial fishing and the OA.	Commercial fishery licence holders and/or representative bodies Government departments or agencies

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
	Tourism Recreation	Interest and activity – Recreational fishing Marine recreation	Potential for unplanned interactions between other marine users with the subsea infrastructure Temporary presence of vessels has the potential to result in disruption to other marine users	Due to the distance from the mainland coast, tourism, recreational and cultural activities (such as traditional fishing) within the OA are expected to be low. The temporary presence of vessels and ongoing presence of subsea hydrocarbon infrastructure within the OA is not expected to significantly affect tourism and recreational activities.	Government departments or agencies Tourism and recreation operators
	Other commercial industries	Interest and activity – Petroleum exploration / production	Temporary presence of vessels has the potential to result in disruption to other marine users	The OA is within approximately 50km of other petroleum titles held by other CAPL and non-CAPL operator projects and activities and therefore the functions, interests and activities of other petroleum titleholders may be affected.	Other petroleum titleholders
Physical presence – marine fauna • field support—temporary (short-term) presence of vessels within the OA during IMR activities.	Marine fauna Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Unplanned interactions with marine fauna	Several BIAs or HCTS of a species overlap with the OA, including: • Pygmy Blue Whale (migration BIA) • Humpback Whale (migration BIA) • Whale Shark (foraging BIA). • Flatback Turtle (interesting, nesting BIA) • Hawksbill Turtle (internesting). As vessels will be slow-moving, the low number of vessels within the OA at any one time, incidences of fauna strike are not expected. If a fauna strike occurred and resulted in death, it is not expected to have a	Government departments or agencies First Nations people and/or representative bodies ENGOs

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
				detrimental effect on the overall population of protected species; this event would result in a limited environmental impact. However it is acknowledged that relevant persons may hold interests relating to the protection of marine fauna.	
Seabed disturbance – • Subsea IMR—as required for IMR activities • field support—contingency anchoring by vessels.	Marine environmental quality Benthic habitat and communities Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Localised and temporary reduction in water quality Alteration of benthic communities and habitats Changes to tangible cultural heritage values	The petroleum activity may result in disturbance when sediment on the seabed is disturbed and becomes suspended in the water column during IMR activities or for contingency anchoring. The impacts are expected to be localised to around the area of seabed disturbance. After the activities are completed, sediments will settle back to the seabed and water quality will return to background levels. No protected UCH sites or tangible UCH have been identified within the OA. Notwithstanding it is acknowledged that that relevant persons may hold interests relating to marine environmental quality, benthic habitats and communities and cultural values, in particular with respect to the protection of Sea Country.	Government departments or agencies First Nations people and/or representative bodies ENGOs
Air emissions – • Platform – combustion of natural gas as a fuel source and flaring • field support—combustion of	Air quality Cultural values	Interest and activity – Environmental conservation	A localised and temporary reduction in air quality	As reduction in air quality will be temporary and highly localised, and as the potential impact of GHG emissions from the petroleum activity to the contribution to the reduction of the global atmospheric carbon budget has been evaluated as having the potential to result in an Incidental (6)	Government departments or agencies First Nations people and/or representative bodies ENGOs

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
marine fuel from vessels, or aviation fuel from helicopters, within the OA.				consequence. It is not expected that the functions, interests or activities of relevant persons will be affected. However, it is acknowledged that relevant persons may hold interests relevant to this aspect.	
GHG emissions • direct emissions from planned activities within scope of this EP • indirect emissions from activities associated with processing of gas • indirect emissions from the transport and third party end-use of LNG, condensate and domestic gas,	Marine environmental quality Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Contribution to the reduction of the global atmospheric carbon budget.		
Light emissions – • Platform – navigation and operational lighting from platform. • field support— navigation and operational lighting from vessels during IMR activities within the OA.	Marine environmental quality Marine fauna Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	A localised and temporary change in ambient light Change in fauna behaviour for light-sensitive species	The activities could result in temporary changes to ambient light emissions. Several BIAs and/or HCTS of a species also overlap with the OA, including: • Flatback Turtle (internesting buffer, nesting) • Hawksbill Turtle (internesting buffer) • Green Turtle (internesting critical habitat) • Whale Shark (foraging) • Lesser Crested Tern, Wedge-tailed Shearwater (breeding).	Government departments or agencies First Nations people and/or representative bodies ENGOs

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
				Given the OA is located ~55 km from the nearest land and the distance in which potential impacts to marine fauna from lighting has been identified as <1.4 km, impacts are expected to be temporary, localised and to limited to transient individuals. However, it is acknowledged that relevant persons may hold interests relevant to the values and sensitivities that may be impacted by this aspect.	
Underwater sound – • Platform – start up and operation of the platform • Subsea IMR – marine acoustic surveys associated with IMR activities within the OA • field support—vessel or helicopter operations during the petroleum activity within the OA	Marine environmental quality Marine fauna Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Localised and temporary change in ambient underwater sound Behavioural disturbance, auditory impairment, temporary threshold shift (TTS), permanent threshold shift (PTS), recoverable or non-recoverable injury to marine fauna	Several BIAs or HCTS of a species overlap with the OA, including: • Pygmy Blue Whale (migration BIA) • Humpback Whale (migration BIA) Localised and behavioural disturbances may occur (depending on the timing of the activity and seasonal presence of sensitive fauna). TTS and auditory impairment are considered highly unlikely to occur due to the need for fauna to remain in close proximity to for extended durations before auditory impairments or injuries occur. Notwithstanding, it is acknowledged that relevant persons may hold interests relevant to the values and sensitivities that may be impacted by this aspect.	Government departments or agencies First Nations people and/or representative bodies ENGOs
Invasive marine pests • field support—planned discharged of ballast water or the presence of	Benthic habitat and communities Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Displacement of, or competition with, native species.	The OA—water depths of ~70–280 m—is located offshore from the mainland coast and large ports, and the seabed is predominantly soft sediments such as sand and clay. Thus, the more favourable requirements of expansive hard substrate and sufficient light for	Government departments or agencies First Nations people and/or representative bodies ENGOs

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
biofouling on vessels undertaking activities within the OA.				invasive marine pest survival are not common within the OA. Although it is highly unlikely the activities in this EP would result in the introduction of invasive marine pests, once established, invasive marine pests can be difficult to eradicate and therefore there is the potential for a long-term change in habitat structure. As a result, relevant persons may hold interests relevant to the values and sensitivities that may be impacted by this aspect.	
Planned discharges – subsea operations • Hydrocarbon system – subsea discharges from start up and operation of the hydrocarbon system. • Subsea IMR – subsea discharges from subsea IMR operations	Marine environmental quality Marine fauna Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Localised and temporary reduction in water quality Changes to predator-prey dynamics	Impacts and risks associated with planned discharges from subsea operations are expected to be limited to close to the release location and temporary in nature. It is unlikely the functions and activities of relevant persons would be impacted by planned discharges from subsea operations, however relevant persons may hold interests relevant to the values and sensitivities that may be impacted by this aspect.	Government departments or agencies First Nations people and/or representative bodies
Planned discharges – vessel operations • field support—vessel operations during the petroleum activity (short-term) within the OA.	Marine environmental quality Marine fauna Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Localised and temporary reduction in water quality Changes to predator-prey dynamics	Impacts and risks associated with planned discharges from vessels are expected to be limited to close to the release location and temporary in nature. It is unlikely the functions and activities of relevant persons would be impacted by planned discharges from vessels, however relevant persons may hold interests relevant to the values and	Government departments or agencies First Nations people and/or representative bodies

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
				sensitivities that may be impacted by this aspect.	
Planned discharges – wastewater • Platform – discharges of wastewater during start up and operation of the platform	Marine environmental quality Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Localised and temporary reduction in water quality	Impacts and risks associated with planned wastewater discharges are expected to be limited to close to the release location and temporary in nature. It is unlikely the functions and activities of relevant persons would be impacted by planned subsea discharges, however relevant persons may hold interests relevant to the values and sensitivities that may be impacted by this aspect.	Government departments or agencies First Nations people and/or representative bodies
Unplanned release – waste • Platform – waste lost from the Platform during start up and operations. • field support— waste lost overboard from vessels during the activity.	Marine fauna Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Marine pollution resulting in entanglement or injury/mortality of marine fauna.	Unplanned releases of waste may result in impacts to injury/mortality to individual marine fauna. It is unlikely the functions and activities of relevant persons would be impacted by an unplanned release of waste, however relevant persons may hold interests relevant to the values and sensitivities that may be impacted by this aspect.	Government departments or agencies First Nations people and/or representative bodies
Unplanned release – minor loss of containment • Hydrocarbon system - loss of containment resulting in the release <58 m3 of condensate	Marine environmental quality Marine fauna Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Indirect impacts to fauna arising from chemical toxicity	Based on the nature of the unplanned release – loss of containment scenarios considered credible in this EP, the extent and severity of any potential impact is expected to be spatially and temporally limited. It is unlikely the functions and activities of relevant persons would be impacted by an unplanned release, however relevant persons may hold interests relevant to	Government departments or agencies First Nations people and/or representative bodies ENGOs

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
• Platform – loss of containment resulting in the release of ~50–60 m3 of condensate or MEG • Subsea IMR - hydraulic line failure from equipment (<1 m3). • Field support – loss of containment of ~50m3 of hazardous materials or diesel				the values and sensitivities that may be impacted by this aspect.	
Unplanned release – vessel collision • vessel and IMR activities during the petroleum activity within the OA.	Marine environmental quality Benthic habitat and communities Coastal communities Marine fauna Marine protected areas World heritage properties National heritage places Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations Commercial fishing Commercial shipping Recreational fishing Marine recreation Petroleum exploration / production	Marine pollution resulting in sublethal or lethal effects to marine fauna Smothering of subtidal and intertidal habitats Indirect impacts to commercial fisheries and other industries Reduction in amenity resulting in impacts to tourism and recreation	Although highly unlikely, an unplanned emergency event resulting in a hydrocarbon spill may affect the functions, interests and activities of relevant persons within the spatial extent of the Hydrocarbon EMBA. Refer to Section 4.1 for information on the Hydrocarbon EMBA.	Government departments or agencies First Nations people and/or representative bodies WA World Heritage advisory committees ENGOs Commercial fishery licence holders and/or representative bodies Commercial shipping industry Tourism and recreation operators

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
	Tourism Recreation Commercial fishing Commercial shipping Other commercial industries		Changes to values and sensitivities of marine protected areas		Other petroleum titleholders Submarine cable operators Research organisations
Unplanned release – hydrocarbon system • Operation of the subsea hydrocarbon system	Marine environmental quality Benthic habitat and communities Coastal communities Marine fauna Marine protected areas World heritage properties National heritage places Cultural values Tourism Recreation Commercial fishing Commercial shipping	Interest and activity – Environmental conservation Cultural values, activities and obligations Commercial fishing Commercial shipping Recreational fishing Marine recreation Petroleum exploration / production	Marine pollution resulting in sublethal or lethal effects to marine fauna Smothering of subtidal and intertidal habitats Indirect impacts to commercial fisheries and other industries Reduction in amenity resulting in impacts to tourism and recreation Changes to values and sensitivities of marine protected areas	Although highly unlikely, an unplanned emergency event resulting in a hydrocarbon spill may affect the functions, interests and activities of relevant persons within the spatial extent of the Hydrocarbon EMBA. Refer to Section 4.1 for information on the Hydrocarbon EMBA.	Government departments or agencies First Nations people and/or representative bodies WA World Heritage advisory committees ENGOs Commercial fishery licence holders and/or representative bodies Commercial shipping industry Tourism and recreation operators Other petroleum titleholders Submarine cable operators Research organisations

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
	Other commercial industries				
Ground disturbance – shoreline spill response	Marine fauna Coastal communities Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Potential to damage terrestrial habitats (including nests), with subsequent impacts to fauna such as turtles and birds.	Shoreline protection and deflection and clean-up activities have the potential to result in short-term and localised damage to or alteration of habitats and ecological communities. Shoreline activities will only be undertaken where there is likely to be a net benefit and therefore the functions, interests and activities of relevant persons are unlikely to be affected.	Government departments or agencies First Nations people and/or representative bodies
Physical presence – oiled wildlife response	Marine fauna Coastal communities Cultural values	Interest and activity – Environmental conservation Cultural values, activities and obligations	Potential to cause further harm to oiled fauna due to hazing, barriers, deterrents, and cleaning activities, and has the potential to cause injury/death.	Oiled wildlife response has the potential to result in injury/mortality to fauna, however will only be undertaken where there is likely to be a net benefit and therefore the functions, interests and activities of relevant persons are unlikely to be affected.	Government departments or agencies First Nations people and/or representative bodies

6.2.7.1 Self-identification

As part of the consultation process (Figure 6-1), CAPL publicly advertised upcoming petroleum activities (refer to Section 6.2.4), to allow for any authorities, persons, or organisations that have not already been identified through the identification process to review information about the petroleum activity, self-identify as a relevant person, and register as a relevant person with CAPL.

This self-identification pathway was included in the consultation process to facilitate a sufficiently broad capture of ascertainable persons and allow for feedback that CAPL may not have otherwise received.

Where an authority, person, or organisation does self-identify, CAPL conducted an assessment to validate that they are a relevant person for an EP (aligned with the considerations described in Sections 6.3.1 to 6.3.5); and if they are, an assessment of the merits of objections or claims and a response was progressed (as per the process in Section 6.3.7).

No new relevant persons self-identified during the consultation period.

6.3 Consultation process

The consultation undertaken during the preparation of this EP used the following process (Figure 6-1):

- described the petroleum activity
- identified environmental aspects
- defined the Hydrocarbon EMBA and identified environmental values and sensitivities
- evaluated environmental impacts and risks and demonstrated these are reduced to ALARP and acceptable levels
- identified functions, interests, or activities that may be affected
- identified relevant persons
- undertook consultation, including co-design of consultation and provision of sufficient information to enable relevant persons to understand how this activity may affect their functions, interests, or activities
- assessed the merit of any objections or claims raised by the relevant persons, and, if appropriate, incorporated information from consultation in this EP to enhance the EP (through description of additional values and sensitivities, update to the risk assessment, additional control measures, addition information in the implementation strategy regarding capacity building for emergency response etc., as appropriate)
- provided a response to the objection or claim, and ensured the response was captured in the EP.

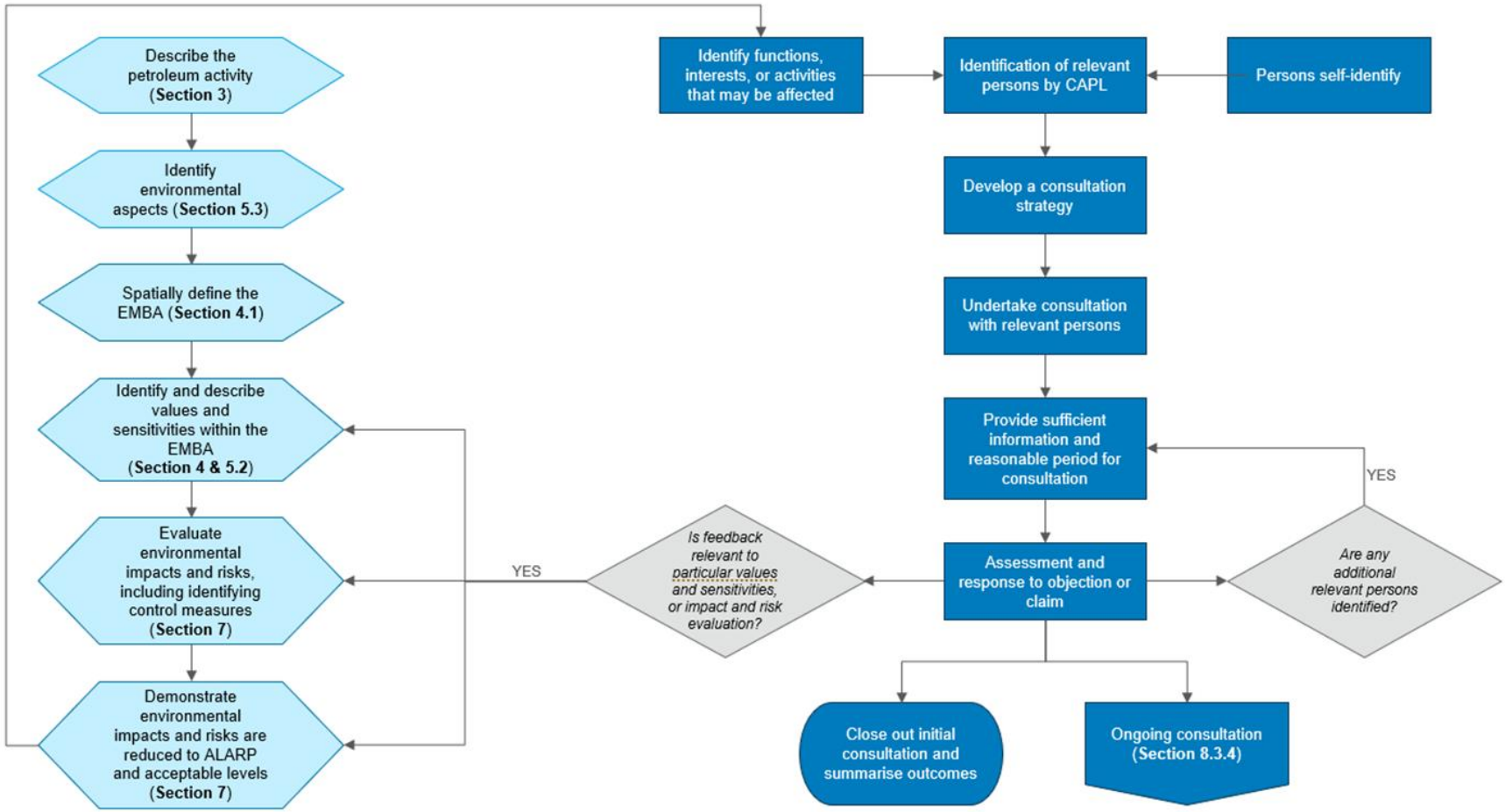


Figure 6-1: Relevant persons consultation process

6.3.1 Relevant persons under regulation 25(1)(a)

In accordance with the OPGGS(E)R, relevant persons include the Commonwealth and State departments or agencies to which activities under this EP may be relevant (Section 6.2.2).

CAPL determined relevant persons under these regulations by considering:

- the spatial extent of the Hydrocarbon EMBA
- the environmental aspects, and potential environmental impacts and risks associated with the petroleum activity
- the responsibilities of the Commonwealth or State department or agency, which was determined by:
  - CAPL's previous consultation history for petroleum activities on the NWS
  - online searches
  - published guidance, including NOPSEMA's *Consultation with Commonwealth agencies with responsibilities in the marine area* guideline (Ref. 368).

The Commonwealth and State departments or agencies that were identified as a relevant person for consultation during the preparation of this EP are presented in Table 6-4.

6.3.2 Relevant persons under regulation 25(1)(b)

In accordance with the OPGGS(E)R, the department or agency of the responsible State Minister is a relevant person (Section 6.2.2).

The petroleum activity within scope of this EP occurs in Commonwealth waters, off the coast of WA. As such, the Department of Mines, Petroleum and Exploration (DMPE) has been identified as a relevant person for consultation during the preparation of this EP (Table 6-4).

6.3.3 Relevant persons under regulation 25(1)(c)

In accordance with the OPGGS(E)R, if the petroleum activity occurs in the Principal NT offshore area, the department of the responsible NT Minister is a relevant person (Section 6.2.2).

The petroleum activity within the scope of this EP occurs in Commonwealth waters, off the coast of WA. As such, NT department has not been identified as a relevant person for consultation during the preparation of this EP.

6.3.4 Relevant persons under regulation 25(1)(d)

In accordance with the OPGGS(E)R, relevant persons include a person or organisation whose functions, interests or activities may be affected by the activities under this EP (Section 6.2.2). The considerations for determining the relevance of a person or organisation are described in Section 6.2.2 and Table 6-3.

The persons or organisations that were identified as a relevant person for consultation during the preparation of this EP are presented in Table 6-4.

Table 6-3: Identification of a person or organisation

Category of persons or organisations	Considerations for identifying a relevant person
Commercial fishery licence holders and/or representative bodies	Commonwealth commercial fisheries: • of recent active fishing effort (based on annual ABARES data) occurring within the OA • fishing method, preferred locations or water depths, fishing season • key target species, distribution, and behaviour • potential for temporal and/or spatial interaction between petroleum activity and the commercial fishery. State commercial fisheries: • guidance from WAFIC (Ref. 470) regarding separate consultation strategies for unplanned events such as oil spills, where the titleholder can demonstrate likelihood of an event is “extremely low” • fishery management area intersects the OA, and a record of recent active fishing effort (based on DPIRD FishCube data) occurring within the OA • fishing method, preferred locations or water depths, fishing season • key target species, distribution, and behaviour • potential for temporal and/or spatial interaction between petroleum activity and the commercial fishery. Peak industry bodies: • where a fishery has been determined as relevant, the representative body is also considered relevant.
ENGOs	• CAPL’s operating experience in the NWS and pre-existing knowledge of local ENGOs • Intersection between the spatial extent of the Hydrocarbon EMBA and/or values and sensitivities of the environment and the ENGO’s interests.
First Nations people and/or representative bodies	First Nations people utilise the coast and marine areas for their cultural identity, health and wellbeing, and their domestic and commercial economies. Therefore, the activities under the EP may be relevant to First Nations people who have an enduring cultural and spiritual connection to the sea. First Nations people or groups were identified through: • Native Title claims or determinations intersecting with, or within the vicinity of the Hydrocarbon EMBA • where an AMP is present within the Hydrocarbon EMBA, a review of any identified First Nations people or groups • review of Native Title determinations to determine cultural and/or spiritual link with BIAs • Country located within or coastally adjacent to the Hydrocarbon EMBA. Representative bodies: • CAPL’s operating experience in the NWS and previous interactions with First Nations representative bodies • where people or a group has been determined as relevant, the representative body is also considered relevant.
Local government departments or agencies	• local government boundary intersects the Hydrocarbon EMBA.

Category of persons or organisations	Considerations for identifying a relevant person
Other petroleum titleholders	• CAPL's operating experience in the NWS and pre-existing knowledge of other petroleum operators • other Commonwealth (based on spatial data from NOPTA) petroleum titles that intersect with the Hydrocarbon EMBA, and with current or proposed activities occurring (based on publicly available EPs from NOPSEMA's EP submission website) within the Hydrocarbon EMBA • other State (based on spatial data from DMPE) petroleum titles that intersect with the EMBA, and with current or proposed activities occurring (based on publicly available EP summaries from DMPE Environmental Assessment and Regulatory System [EARS] Online database) within the Hydrocarbon EMBA • potential for temporal and/or spatial interaction between petroleum activity and the operator of another petroleum title.
Tourism and recreation operators	Tourism and recreation operators: • CAPL's operating experience in the NWS and pre-existing knowledge of local tour and recreational operators • a record of recent active tour operator fishing effort (based on DPIRD FishCube data) occurring within the Hydrocarbon EMBA • where an AMP is present within the Hydrocarbon EMBA, a review of the 'authorisations issued' from Parks Australia (Ref. 233) • potential for temporal and/or spatial interaction between petroleum activity and the tourism/recreational operator. Peak industry bodies: • where a tourism or recreational operator has been determined as relevant, the representative body is also considered relevant.
WA World Heritage advisory committees	• World Heritage area intersects the Hydrocarbon EMBA, and an Australian World Heritage advisory committee exists.

6.3.5 Relevant persons under regulation 25(e)

In accordance with the OPGGS(E)R, relevant persons may include any other person or organisation that CAPL considers relevant.

Where a person or organisation on this list does not already become a relevant person under regulation 25(d) (using the process as described in Section 6.3.3), CAPL may voluntarily opt to include them in the consultation for the petroleum activity as part of wider and ongoing engagement with their broad stakeholder base.

6.3.6 Conclusion on relevant persons identified

As a result of application of the methodology and identification, the relevant persons identified for the purposes of regulation 25 of the OPGGS(E)R are listed in Table 6-4. CAPL is confident that it has used multiple lines of evidence to identify all relevant persons.

Table 6-4: Relevant persons identified for consultation during preparation of the EP

Relevant person	Rationale
Commonwealth department or agencies (regulation 25[1][a])	
Australian Communications and Media Authority (ACMA)	ACMA is a relevant agency for consultation where an activity has the potential to impact economic or social benefits communications infrastructure for Australia. As identified in Section 4.4.6, the Hydrocarbon EMBA overlaps existing submarine cables. Therefore, the activities under the EP may be relevant to ACMA.
Australian Fisheries Management Authority (AFMA)	As identified in NOPSEMA's consultation guideline (Ref. 368), AFMA is a relevant agency for consultation where an activity can impact or has the potential to impact on fisheries resources in AFMA managed fisheries. Commonwealth fishery management areas have been identified as overlapping with the Hydrocarbon EMBA (Section 4.4.1). Therefore, the activities under the EP may be relevant to the AFMA.
Australian Hydrographic Office (AHO)	As identified in NOPSEMA's consultation guideline (Ref. 368), AHO is a relevant agency for consultation when nautical products or other maritime safety information is required to be updated. Vessel operations are required for the activities within scope of this EP (Section 3.4.1), a safety exclusion zone will be requested around the vessels (Section 3.4.1). Therefore, the activities under the EP may be relevant to the AHO.
Australian Maritime Safety Authority (AMSA)	As identified in NOPSEMA's consultation guideline (Ref. 368), AMSA is a relevant agency for consultation where a proposed activity may impact on the safe navigation of commercial shipping in Australian waters. The Hydrocarbon EMBA intersects shipping routes (Section 4.4.4). Therefore, the activities under the EP may be relevant to the AMSA.
Clean Energy Regulator	As identified in NOPSEMA's consultation guideline (Ref. 368), the Clean Energy Regulator is a relevant agency for consultation where: • a change to an existing NGER-reporting facility or activity that triggers an EP revision • a revision for an existing Safeguard-covered facility or activity. • construction, installation or operation of a new facility or activity that is expected to trigger the Safeguard Mechanism. • a greenhouse gas appraisal or storage activity. As part of the Wheatstone Project, the activities under the EP may be relevant to the Clean Energy Regulator.
Department of Agriculture, Fisheries and Forestry (DAFF)	As identified in NOPSEMA's consultation guideline (Ref. 368), DAFF is a relevant agency for consultation where an activity has the potential to impact on fishing operations and/or fishing habitats in Commonwealth waters. Commonwealth and State managed fisheries have been identified as overlapping with the Hydrocarbon EMBA (Section 4.4.1). Therefore, the activities under the EP may be relevant to DAFF.
Director of National Parks (DNP)	As identified in NOPSEMA's consultation guideline (Ref. 368), DNP is a relevant agency for consultation where: • the activity or part of activity is within the boundaries of a proclaimed AMP • activities proposed to occur outside a reserve may impact on the values within an AMP

Relevant person	Rationale
	• an environmental incident occurs in Commonwealth waters surrounding an AMP and may impact on the values within the park. The Hydrocarbon EMBA intersects AMPs (Section 4.5.1). Therefore, the activities under the EP may be relevant to the DNP.
Department of Climate Change, Energy, Environment and Water (DCCEEW)	As identified in NOPSEMA's consultation guideline (Ref. 368), DCCEEW is a relevant agency for consultation where an activity has the potential to directly or indirectly adversely impact on protected UCH. The Hydrocarbon EMBA overlaps with UCH (shipwrecks) (Section 4.6.2). Therefore, the activities under the EP may be relevant to the DCCEEW.
Department of Defence (DoD)	As identified in NOPSEMA's consultation guideline (Ref. 368), DoD is a relevant agency for consultation where: • a proposed activity may impact DoD training and operational requirements; • a proposed activity encroaches on known training areas and/or restricted airspace • there is a risk of unexploded ordnance in the area where the activity is taking place. DoD areas and/or facilities do not intersect the Hydrocarbon EMBA (Section 4.4.6). However, the activities under the EP may be relevant to the DoD.
State or Northern Territory departments or agencies (regulation 25[1][b])	
Department of Biodiversity, Conservation and Attractions (DBCA)	DBCA promotes biodiversity and conservation through sustainable management of WA's species, ecosystems, lands and the attractions in their care. The Hydrocarbon EMBA intersects State terrestrial and marine protected areas (Sections 4.5.2 and 4.5.3). Therefore, the activities under the EP may be relevant to DBCA.
Department of Primary Industries and Regional Development (DPIRD)	DPIRD's responsibility is to conserve, sustainably develop and share the use of WA's aquatic resources and their ecosystems. As identified in their consultation guideline (Ref. 44), DPIRD considers that it is a relevant person where a petroleum activity may potentially affect commercially and recreationally important fish species, their prey and habitats, and the business activities of the fishers who harvest these resources in State or Commonwealth waters. State managed fisheries and recreational fisheries have been identified as overlapping with the Hydrocarbon EMBA (Sections 4.4.1 and 4.4.2). Therefore, the activities under the EP may be relevant to DPIRD.
Department of Transport (DoT) - Maritime Environmental Emergency Response (MEER) - Marine Pollution	DoT (MEER) is the hazard management agency for marine oil pollution and maritime transport emergencies in Western Australian waters. The MEER's role is to develop marine oil spill response capabilities, provide resources and support during response operations, training programs, assist in the development of oil spill contingency plans and raise community awareness about the impact of oil spills. MEER considers that it is a relevant person if activities have the potential to cause a marine oil pollution incident in State waters (Ref. 181). The unplanned hydrocarbon release scenario predicted some areas of State waters may be exposed (Sections 8.1 and 8.2). Therefore, the activities under the EP may be relevant to DoT.
Australian Border Force (ABF)	The ABF is a federal law enforcement agency, part of the Department of Home Affairs, responsible for offshore and onshore border enforcement, investigations, compliance, detention operations and customs services in Australia. Therefore, the activities under this EP may be relevant to ABF.

Relevant person	Rationale
Department of Planning, Lands and Heritage (DPLH)	DPLH are responsible for the planning and managing land and heritage for all Western Australians. Therefore, the activities under this EP may be relevant to DPLH.
Department of Energy and Economic Diversification (DEED)	DEED lead Western Australia's energy transition and economic development, facilitate international trade and investment, and promote the international education, science and innovation sectors. Therefore, the activities under this EP may be relevant to DEED.
Department of Water and Environment (DWER)	DWER supports WA's community, economy and environment by managing and regulating the state's environment and water resources on behalf of the Minister for the Environment. Therefore, the activities under this EP may be relevant to DWER.
Pilbara Ports Authority	The Pilbara Ports Authority assumes oversight of Barrow Island, Onslow, Port of Ashburton and more and operates as a corporatized entity that reports to the State Government of WA's Minister of Ports. The activity occurs within Commonwealth and State waters, requires vessels and ports for use. Therefore, the activities under the EP may be relevant to the Pilbara Ports Authority.
Environmental Protection Authority (EPA)	The WA EPA is established under the *Environmental Protection Act 1986* (Cth), with the objective to protect the environment and to prevent, control and abate pollution and environmental harm. The EPA provides strategic advice to the Minister of the Environment. Therefore, the activities under this EP may be relevant to the EPA.
Department of the responsible State or Northern Territory Minister (regulation 25[1][c])	
Department of Mines, Petroleum and Exploration (DMPE)	DMPE is the department of the responsible State Minister. Therefore, they are considered a relevant person as per regulation 25(1)(c) of the OPGGS(E)R.
Person or organisation whose functions, interests, or activities may be affected by the petroleum activity (regulation 25[1][d])	
First Nations people and/or representative bodies	
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	The BTAC was registered in 2008 to represent, protect, and support the interests of the Thalanyji people. Thalanyji Country spreads out across the Ashburton River coastal plain south to Tubridji Point, then across to Yannarie River and upstream to Emu Creek, across the range hills of southwest Pilbara to Henry River and Cane River in the north. The Hydrocarbon EMBA intersects this area of coast, and also extends into the offshore waters of the Pilbara. No Native Title determination currently exists within the Hydrocarbon EMBA and this group have not been identified in an AMP Management Plan. However, given that the Hydrocarbon EMBA occurs offshore from the Pilbara coast, and engagement with BTAC identified that Sea Country is of recognised value to the Thalanyji people, the activities under the EP may therefore be relevant to this RNTBC and the Thalanyji people. Note: CAPL has also consulted NTGAC who also represents the Thalanyji people for Native Title rights and interests.
Thalanyji people	

Relevant person	Rationale
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	The NTGAC was registered in 2019 to represent, protect and support the interests of the Baiyungu, Thalanyji and Yinggarda people. The RNTBC represents an area that extends approximately from Exmouth Gulf to Lake Macleod. The Hydrocarbon EMBA does not intersect this area of coast, however the Hydrocarbon EMBA is within the offshore waters of the Pilbara and Gascoyne. Native Title determination WCD2019/016 intersects the outer extent of the Hydrocarbon EMBA (Section 4.6.3). Therefore, the activities under the EP may be relevant to this RNTBC and the Baiyungu, Thalanyji and Yinggarda people.
Baiyungu people	
Thalanyji people	
Yinggarda people	
MCH (individual representative)	An individual contacted CAPL via phone in August 2023 and identified themselves as a Traditional Custodian for the Mardathoonera people. The Mardathoonera people are a Pilbara language group, and engagement with the individual identified that Barrow Island was culturally significant. Given that the waters off Barrow Island overlap the Hydrocarbon EMBA for this EP, CAPL considers that the individual and the family organisation has functions, interests or activities that may be affected by the petroleum activity to be carried out under the EP. Therefore, they are considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
MCH (family organisation)	
Nhuwala Claimants	The Nhuwala Claim Group filed a Native Title Determination Application (WC2024/008) on 18 December 2024. The claim area is located in the Pilbara region and extends offshore. No Native Title determination currently exists within the Hydrocarbon EMBA. However, given that the Hydrocarbon EMBA occurs offshore from the Pilbara coast, the activities under the EP may therefore be relevant to the Nhuwala Claimants.
Wirrawandi Aboriginal Corporation (WAC) RNTBC	The WAC was registered in 2018 to hold and manage the native title rights and interests for the Mardathoonera and Yaburara people. Mardathoonera and Yaburara Country is in the Pilbara region (approximately between Maitland and Robe rivers). The Hydrocarbon EMBA does not directly intersect with this area of coast, however it does extend into the offshore waters of the Pilbara. Native Title determination (WCD2018/006) is also located outside of the Hydrocarbon EMBA. Therefore, the activities under the EP may be relevant to this RNTBC and the Mardathoonera and Yaburara people.
Mardathoonera people	
Yaburara people	
Commercial fishery licence holders and/or representative bodies	
Australian Council of Prawn Fisheries	These organisations are peak bodies representing the commercial fishers within Commonwealth or State-managed commercial fisheries. Commonwealth and State managed fisheries have been identified within the Hydrocarbon EMBA (Section 4.4.1). As such, these organisations have functions, interests, or activities, that may be affected by the activities to be carried out under the EP.
Aquaculture Council of Western Australia	
Commonwealth Fisheries Association	

Relevant person	Rationale
North West Slope Trawl Fishery	
Tuna Australia	
Marine Tourism WA	
Western Deepwater Trawl Fishery	
Western Australian Fishing Industry Council (WAFIC)	
Tourism and recreation operators	
Recfishwest	This organisation is the peak body representing the State-managed recreational fisheries. Recreational fishing has been identified within coastal and nearshore areas of the Hydrocarbon EMBA (Section 4.4.2). As such, this organisation has functions, interests, or activities, that may be affected by the activities to be carried out under the EP.
Ningaloo Visitor Centre	Ningaloo Visitor Centre is located in Exmouth and provides advice and services to both locals and tourists. The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions (Section 4.4.5). As such, this organisation has functions, interests, or activities, that may be affected by the activities to be carried out under the EP.
Boating Industry Association Western Australia (BIAWA)	BIAWA is the voice of the West Australian recreational boating industry, with the main purpose to promote and encourage safe boating and other aquatic sports and pastimes within WA. The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions. As such, this organisation has functions, interests, or activities, that may be affected by the activities to be carried out under the EP.
Ashburton Anglers	Recreational fisheries, tourism and recreational activities have been identified as occurring within or adjacent to the Hydrocarbon EMBA (Section 4.4.2). As such, these businesses may have functions, interests, or activities, that may be affected by the activities to be carried out under the EP.
Apache Fishing Charters	
Aquatic Adventure Exmouth	
Archipelago Adventures	
Blue Juice Charters	
Blue Horizon Charters	
Blue Lightning Fishing Charters	

Relevant person	Rationale
Bluesun 2 Boat Charters	
Cape Immersion Tours	
Coastal Adventure Tours	
Coral Bay Ecotours	
Cruise Ningaloo	
Dampier Island Tourism	
Discovery Holiday Parks Pty Ltd	
Dive Ningaloo	
Eco-Abrolhos Pty Ltd	
Evolution Fishing Charters	
Exmouth adventure co.	
Exmouth Dive and Whalesharks Ningaloo	
Exmouth Dive Centre	
Exmouth Game Fishing Club	
Image Dive and Charters	
Innkeeper Sport Fishing Charter	
Kings Ningaloo Reef Tours	
Live Ningaloo	
Mackerel Islands and Onslow Beach Resort	
Mahi Mahi Charters	
Montebello Island Safaris	

Relevant person	Rationale
Nickol Bay Sport Fishing Club	
Ningaloo Aviation	
Ningaloo Blue Dive	
Ningaloo Coral Bay Boats	
Ningaloo Discovery	
Ningaloo Ecology Cruises	
Ningaloo Fly Fishing	
Ningaloo Glass Bottom Boat	
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	
Ocean Charters Pty Ltd (Absolute Ocean Charters)	
On Strike Charters	
Peak Sportfishing Charters	
Pelican Charters	
Sail Ningaloo	

Relevant person	Rationale
Three Islands Whale Shark Tours	
Top Gun Charters	
Ultimate WaterSports	
Venture Ningaloo	
View Ningaloo	
Wilderness Island	
Willie Creek Pearl Farm Pty Ltd	
Yardi Creek Boat Tours	
Local government departments or agencies	
Shire of Ashburton	The Hydrocarbon EMBA intersects State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions. Therefore, local governments may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Shire of Carnarvon	
City of Karratha	
Shire of Exmouth	
WA World Heritage advisory committees	
Ningaloo Coast World Heritage Advisory Committee	The Ningaloo Coast World Heritage Advisory Committee provides advice to the Commonwealth and State Environment Ministers on the protection, conservation and management specific to Ningaloo Coast World Heritage Area. The Hydrocarbon EMBA intersects the Ningaloo Coast World and National heritage areas (Section 4.6). Therefore, Ningaloo Coast World Heritage Advisory Committee is considered a relevant person under regulation 25(1)(d) of the OPGGS(E)R.
Other petroleum titleholders	
BP Developments Australia	Petroleum operations have been identified to occur within the spatial extent of the Hydrocarbon EMBA (Section 4.4.6). Therefore, other petroleum titleholders are considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Carnarvon Energy	
Eni Australia	
Exxon Mobil	
Jadestone Energy	

Relevant person	Rationale
Kato Energy / Kato NWS Pty Ltd	
Kufpec	
Santos	
Shell	
Western Gas	
Woodside	
ENGOs	
Australian Marine Conservation Society	ENGOs are organisations concerned about public welfare, people and the environment. Several environmental receptors intersect with the Hydrocarbon EMBA (Section 4). Therefore, ENGOs may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Cape Conservation Group	
Protect Ningaloo	
Other	
Australian Institute of Marine Science (AIMS)	AIMS undertake research on marine fauna through the North-west Shoals to Shore Research Program (NWSSRP). The NWSSRP monitors Pygmy blue whales and turtles amongst other marine fauna that is present within the Hydrocarbon EMBA. Therefore, AIMS may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Australian Marine Oil Spill Response Centre (AMOSC)	AMOSC are a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan. Therefore, they are considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Care for Hedland Environmental Association	Care for Hedland are an independent environmental interest group, pursuing a shared vision of environmental awareness and improvements for the townships of Port and South Hedland, along with the wider Pilbara region. They run a community-based Flatback Turtle monitoring program, and engagement with the representative identified that a genetic link existed between the Flatback Turtles nesting populations at Port Hedland, Barrow Island, and the broader NWS. While there is no predicted interaction with Port Hedland from planned activities or an unplanned event associated with this EP, given the migratory nature of marine turtles and that the Pilbara Coast represents a single genetic stock (Ref. 129), CAPL considers that the Care for Hedland Environmental Association has functions, interests or activities that may be affected by the petroleum activity to be carried out under the EP. Therefore, they are considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.

Relevant person	Rationale
Exmouth Chamber of Commerce and Industry (ECCI)	The ECCI is a representative organisation that promotes the interests of members and the business community in Exmouth, and Gascoyne region. The EMBA for this EP intersects Commonwealth and State waters offshore of the Pilbara and Gascoyne regions. Therefore, ECCI may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Exmouth Gulf Taskforce (EGT)	The EGT provides high level advice to the Minister for the Environment, on the environmental management of the Exmouth Gulf and its surrounds, to help preserve the region's unique environmental, cultural and social values. Therefore, EGT may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Carnarvon Chamber of Commerce (CCI)	The CCI is a representative organisation that promotes the interests of members and the business community in Carnarvon and Gascoyne region. The EMBA for this EP intersects Commonwealth and State waters offshore of the Pilbara and Gascoyne regions. Therefore, CCI may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Karratha and Districts Chamber of Commerce and Industry (KDCCI)	The KDCCI is a representative organisation that promotes the interests of members and the business community in Karratha and Pilbara region. The EMBA for this EP intersects Commonwealth and State waters offshore of the Pilbara and Gascoyne regions. Therefore, KDCCI may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Onslow Chamber of Commerce and Industry (OCCI)	The OCCI is a representative organisation that promotes the interests of members and the business community in Onslow and the Pilbara Region. The EMBA for this EP intersects Commonwealth and State waters offshore of the Pilbara and Gascoyne regions. Therefore, OCCI may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Oil Spill Response Limited	Oil Spill Response Limited are a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan. Therefore, they are considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Telstra	Telstra are a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP. Therefore, they are considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Vocus Communications	Vocus Communications are a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the environment plan. Therefore, they are considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Any other person or organisation that the titleholder considers relevant (regulation 25[1][e])	
Commercial fishery licence holders and/or representative bodies	
Pearl Producers Association	Pearl Producers Association are the peak representative body of the Australian South Sea Pearling Industry. Relevant pearling operations occur outside the boundary of Hydrocarbon EMBA, however under regulation 25(1)(e) CAPL selected to include the council in consultation.
Western Rock Lobster Council	Western Rock Lobster Council is the peak industry body representing the interests of the western rock lobster fishery. The Western Rock Lobster fishery operates outside the boundary of Hydrocarbon EMBA, however under regulation 25(1)(e) CAPL selected to include the Western Rock Lobster Council in consultation.

Relevant person	Rationale
Tourism and recreation operators	
Tourism Western Australia	The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e), CAPL selected to include this organization in consultation.
WA Game Fishing Association	
Karratha Tourism and Visitor Centre	
Other	
Pilbara Development Commission	The Pilbara Development Commission works across government to support economic growth, stimulate job growth and increase industry innovation among other things. The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Gascoyne Junction Community Resource Centre (GJCRC)	GJCRC provides information about places of interest and provide direction for local services and business providers within that Gascoyne region. Therefore, the activities under the EP may be relevant to the GJCRC.
Gascoyne Development Commission (GDC)	The GDC works across government to support economic growth, stimulate job growth and increase industry innovation among other things. The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Australian Energy Producers (AEP)	AEP has roughly 200 members, comprising oil and gas explorers and producers active in Australia and companies providing goods and services to those explorers and producers. Therefore, under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Exmouth Gulf Taskforce	The Exmouth Gulf Taskforce provides high level advice to the Minister for Environment on the environmental management of the Exmouth Gulf and its surrounds, to help preserve the region's unique environmental, cultural and social values. The Hydrocarbon EMBA intersects Commonwealth and State waters around Exmouth, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
WA Coastal and Marine Community Network	The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
WA Marine Science Institute	The Western Australian Marine Science Institution is a collaboration of state and federal government and academic science organisations working together to provide independent marine research for the benefit of the environment, the community and the Blue Economy. The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.

Relevant person	Rationale
Western Australian Museum	The Western Australian Museum is the State's premier cultural organisation, housing WA's scientific and cultural collection. The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Centre for Whale Research Western Australia	The Centre for Whale Research (Western Australia) Inc. is a non-profit research established in 1993 to conduct scientific research into marine mammals. The Hydrocarbon EMBA intersects Commonwealth and State waters offshore, and some offshore islands, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Wilderness Society	ENGOs are organisations concerned about public welfare, people and the environment. The Hydrocarbon EMBA intersects Commonwealth and State waters offshore of the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Whale and Dolphin Conservation Society	
International Fund for Animal Welfare	
Greenpeace	
Conservation Council of Western Australia	
Australian Conservation Foundation	

6.3.7 Assessment and response

CAPL has assessed the merits of all objections and claims regarding the consequences of the petroleum activity on a relevant persons functions, interests, or activities received during the consultation period that relate to the petroleum activity, consistent with regulation 24(b)(ii) of the OPGGS(E)R. This was done by evaluating appropriate evidence, including evidence provided by the relevant person submitting the objection or claim, and identifying potential impacts or risks on the totality of the values and sensitivities that could be affected by the petroleum activity. Potentially adverse impacts of the petroleum activity may need to be mitigated through the application of appropriate control measures. Claims or objections not directly related to the petroleum activity (such as statements of fundamental objection to the oil and gas industry) are not considered to have merit under the OPGGS(E)R because they are not relevant to the petroleum activity itself, or the impacts and risks of the petroleum activity. However, the consultation report summarises these statements and explains why they have not been considered in preparing the EP.

A summary of the outcomes of consultation undertaken with relevant persons during the preparation of this EP is provided in appendix d. The table provides a description of the matters, objections or claims, assessment of the merits of the objection or claim, how CAPL responded to the relevant person, and where or how any changes resulting from the consultation were incorporated into the EP.

A record of all consultation undertaken specifically for this petroleum activity is included in the engagement log, which is provided to NOPSEMA in the sensitive information report.

6.3.8 Summary information

Regulation 24 of the OPGGS(E)R requires that an EP contain:

- a report on all consultations under regulation 25 of any relevant person by the titleholder, that contains:
  - a summary of each response made by a relevant person
  - an assessment of the merits of any objection or claim about the adverse impact of each activity to which the EP relates
  - a statement of the titleholder's response, or proposed response, if any, to each objection or claim
  - a copy of the full text of any response by a relevant person.

Regulation 34(g)(ii) of the OPGGS(E)R requires that the EP demonstrates that "the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate".

A summary of each response, CAPL's assessment of the merits of any objection or claim, and CAPL's response to each objection or claim is provided within appendix d. The consultation summary also describes what (if any) changes to the EP, including control measures, were made in response to each objection or claim.

6.3.9 Conclusion on consultation

The objective of consultation, which is referred to above in Section 6, but reiterated below, informs whether consultation has been closed:

> *"Regulation 25, like most statutory consultation provisions, imposes an obligation that must be capable of practicable and reasonable discharge by the person upon whom it is imposed. Consultation is a "real world" activity, with specific purposes. Here, 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."*[13]

As stated above in Section 6, the purpose of consultation is also to:

- identify the social and cultural features of communities within the ecosystem
- inform the control measures to eliminate, reduce, and mitigate impacts and risks to those socio-cultural values and sensitivities in response to relevant persons concerns
- to inform NOPSEMA of relevant persons' identities, the nature of the consultation, and the control measures adopted[14].

Regulation 25(2) of the OPGGS(E)R requires the titleholder to give the relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person. Regulation 25(3) of the OPGGS(E)R requires the relevant person to be afforded a reasonable period for the consultation.

Consultation is a process that is not indeterminate and must be reasonably capable of being closed once the process is complete. As Lee J stated in *Santos NA Barossa Pty Ltd v Tipakalippa* "[*i*]*t 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*."[15]

Regulation 33(1)(a) of the OPGGS(E)R requires that if NOPSEMA is reasonably satisfied that the EP meets the criteria in regulation 34 of the OPGGS(E)R then NOPSEMA must accept the EP. Meeting these requirements is the evaluative judgment to determine reasonable satisfaction of the consultation obligation, and as such, NOPSEMA uses its discretion to determine if these criteria are met. The Full Federal Court determined that this is a state of satisfaction that is a prerequisite to an exercise of a statutory power, and that there must be an evident and intelligible justification that must be objectively ascertained by a reviewing Court[16].

CAPL has undertaken the consultation process as described in Section 6, and in doing so has met the objective of consultation as articulated in the relevant case law, and met the requirements of regulation 25. CAPL has also reviewed and incorporated objections and claims made in the Woodside Julimar Operations

[13] Paragraph 89 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 2).

[14] Paragraphs 55–57 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 2).

[15] Paragraph 136 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 2).

[16] Paragraphs 31 and 32 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 2).

Environmental Plan within appendix d. This therefore provides NOPSEMA with evident and intelligible justification for being reasonably satisfied that the EP acceptance criteria for consultation are met.

CAPL has completed all practicable and reasonable steps to discharge its consultation obligations. As detailed in this EP, CAPL has provided sufficient information (Section 6.2.4) and a reasonable period of time (Section 6.2.5) to enable relevant persons to make an informed assessment of the possible impacts and risks of the petroleum activity on their functions, interests or activities (meeting the requirements of regulation 25). The consultation process has informed CAPL's understanding of the environment, including (amongst other things) people and communities, the heritage value of places, their social and cultural features which may be affected by the proposed activities. CAPL has provided sufficient time to relevant persons to provide relevant input for CAPL to assess relevant persons claims and objections, and to action the input from relevant persons. CAPL has:

- updated its description of environment (Section 4) to include values and sensitivities raised by relevant persons
- updated its impact and risk assessment (Section 7) to include assessment of input from relevant persons on their values and sensitivities (particularly in relation to marine fauna and intangible cultural heritage), including revision and/or addition of control measures
- through this EP, informed NOPSEMA of relevant persons identities, the nature of the consultation, and the control measures adopted.

For further detail, see appendix d and the sensitive information report.

CAPL notes it has discharged its obligations under regulation 25 considering:

- CAPL has implemented a thorough process to 'screen in' potential relevant persons and has allowed potential relevant persons opportunities to self-identify
- Consultation on this EP commenced on 4 September 2025, and information on the activity, including information on potential impacts and risks associated with the activity, has been presented on CAPL's website during this time with the option to provide feedback online
- CAPL has maintained a toll-free contact number for persons or organisations to call and participate in consultation
- CAPL published notices in seven newspapers, as outlined in Section 6.2.4
- CAPL has attended face-to-face meetings with First Nations representative bodies while consulting on this EP (as outlined in appendix d), and provided tailored and bespoke consultation material for consideration
- 6 weeks was provided for consultation (Section 6.2.5) for this EP revision (to include the operation of the Julimar-Brunello hydrocarbon system), with consultation closing on 16 October 2025.

CAPL has also provided a reasonable opportunity for relevant persons to engage in genuine two-way dialogue on environmental impacts and concerns, and CAPL will undertake its ongoing consultation obligations (Section 8.3.4.1).

Based on the above, CAPL has discharged its duty under regulation 25. CAPL considers that consultation under regulation 25 is complete.

It is noted that CAPL is not required to obtain consent from a relevant person to engage in the petroleum activity.

To the extent a relevant person says that it has further information to share or claims that consultation under regulation 25 has not completed, appendix d provides reasons specifically why CAPL considers consultation under regulation 25 has been met in relation to that relevant person. It is noted that further information can be considered during ongoing consultation under regulation 22(15).

7 environmental impact and risk assessment and management—petroleum activity

This section provides an evaluation of the impacts and risks associated with the petroleum activity appropriate to the nature and scale of each impact and risk, details the control measures that are used to reduce the risks to ALARP and to an acceptable level, and identifies the associated environmental performance outcomes, performance standards, and measurement criteria, as required under Regulations 21(5), 21(6) and 21(7) of the OPGGS(E)R.

Table 7-1 summarises the impacts and risks that were identified and evaluated for this activity.

Table 7-1: Summary of impact and risk evaluation—petroleum activity

Section	Aspect	Impact	Risk			Decision context	ALARP	Acceptable
		C^	C^	L	R			
Hydrocarbon system								
7.1.1	Physical presence—Other marine	–	6	4	9	A	Yes	Yes
7.1.2	Greenhouse gas emissions	–	–	–	–	–	–	–
7.1.3	Planned discharges—Subsea operations	6	6	6	10	A	Yes	Yes
7.1.4	Unplanned release—Loss of containment	–	5	5	9	A	Yes	Yes
Platform								
7.2.1	Physical presence—Other marine users	–	6	4	9	A	Yes	Yes
7.2.2	Air emissions	6	–	–	–	A	Yes	Yes
7.2.3	Greenhouse gas emissions	6	–	–	–	A	Yes	Yes
7.2.4	Light emissions	5	5	5	9	A	Yes	Yes
7.2.5	Underwater sound	6	–	–	–	A	Yes	Yes
7.2.6	Planned discharges—Produced water	4	4	5	8	A	Yes	Yes
7.2.7	Planned discharges—Wastewater	5	6	5	10	A	Yes	Yes
7.2.8	Unplanned release—Waste	–	6	5	10	A	Yes	Yes
7.2.9	Unplanned release—Loss of containment	–	5	4	8	A	Yes	Yes
IMR								
Subsea								
7.3.1.1	Seabed disturbance	5	5	6	10	A	Yes	Yes
7.3.1.2	Greenhouse gas emissions	–	–	–	–	–	–	–
7.3.1.3	Underwater sound	5	5	5	9	A	Yes	Yes
7.3.1.4	Planned discharges—Subsea operations	6	6	6	10	A	Yes	Yes

Section	Aspect	Impact	Risk			Decision context	ALARP	Acceptable
		C^	C^	L	R			
7.3.1.5	Unplanned release—Loss of containment	–	6	5	10	A	Yes	Yes
Onshore								
7.3.2.1	Physical presence—Terrestrial fauna	–	6	5	10	A	Yes	Yes
7.3.2.2	Ground disturbance	–	6	6	10	A	Yes	Yes
7.3.2.3	Greenhouse gas emissions	–	–	–	–	–	–	–
7.3.2.4	Dust emissions	–	–	–	–	–	–	–
7.3.2.5	Light emissions	–	–	–	–	–	–	–
7.3.2.6	Fire	–	–	–	–	–	–	–
7.3.2.7	Non-indigenous species	–	5	6	10	A	Yes	Yes
7.3.2.8	Unplanned release—Loss of containment	–	6	4	9	A	Yes	Yes
7.3.2.9	Unplanned release—Waste	–	6	5	10	A	Yes	Yes
Field support								
7.4.1	Physical presence—Other marine users	–	6	5	10	A	Yes	Yes
7.4.2	Physical presence—Marine fauna	–	6	5	10	A	Yes	Yes
7.4.3	Seabed disturbance	5	5	5	9	A	Yes	Yes
7.4.4	Air emissions	6	–	–	–	A	Yes	Yes
7.4.5	Greenhouse gas emissions	6	–	–	–	A	Yes	Yes
7.4.6	Light emissions	5	5	5	9	A	Yes	Yes
7.4.7	Underwater sound	5	5	3	7	A	Yes	Yes
7.4.8	Invasive marine pests	–	2	6	7	A	Yes	Yes
7.4.9	Planned discharges—Vessel operations	6	6	5	10	A	Yes	Yes
7.4.10	Unplanned release—Waste	–	6	5	10	A	Yes	Yes
7.4.11	Unplanned release—Loss of containment	–	5	5	9	A	Yes	Yes
Intangible cultural heritage values								
7.5	Intangible Cultural Heritage	–	5	4	8	A	Yes	Yes

C = Consequence; L = Likelihood; R = Risk level

^ Where an aspect is identified as having both potential impacts and risks, the highest-level consequence was evaluated in detail to ensure that justification is provided to support the highest consequence level for the aspect.

7.1 Hydrocarbon system

7.1.1 Physical presence—Other marine users

Source

Activities identified as having the potential to result in an interaction with other marine users are:

- permanent presence of the subsea hydrocarbon system within the OA.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Unplanned interactions with other marine users may result in: • disruption to fishing vessels and/or entanglement of trawl fishing gear on subsea infrastructure.	6

Consequence evaluation

The subsea hydrocarbon infrastructure associated with this activity is contained wholly within the OA. The field OA consists of an area of ~1090 km^2, and the trunkline is ~221km long. The potential for unplanned interactions between other marine users with the subsea hydrocarbon system is limited to where these users interact with the seafloor.

Disruption to fishing vessels and/or entanglement of trawl fishing gear on subsea infrastructure

Marine users that have the potential to interact with the subsea infrastructure are limited to commercial fisheries that utilise trawling fishing methods. The potential risks to trawling vessels from subsea infrastructure includes disruption to fishing efforts caused by the need for vessels to avoid the infrastructure and physical damage to trawling gear that contacts the hydrocarbon system.

The OA overlaps the fisheries management areas of three Commonwealth Fisheries. As identified in Section 4.4.1, only one of these Commonwealth managed commercial fisheries (North West Slope Trawl Fishery) has recorded fishing effort within the OA during 2018–2023 (Ref. 2). The extent to which the OA overlaps this trawl fishery management area is ~31%, with the only infrastructure to intersect being some of the Wheatstone wells located in petroleum licences WA-46-L and WA-47-L. Fishing activity within the North West Slope Trawl Fishery is restricted to waters >200 m water depth. The entire fishery has a small number of active permits and vessels (e.g. seven permits with three vessels were active during the 2022-2023 season [Ref. 2]).

Of the 12 State managed fisheries with management areas that overlap the OA and have recent fishing efforts recorded (Section 4.4.1), two (Pilbara Crab Managed Fishery and Pilbara Trap Managed Fishery) use trap methods that may intersect with subsea infrastructure on the seabed. However, fishing effort is typically low within the 60 nm fishery grid blocks that intersect with the OA (Section 4.4.1). The Pilbara Trap Managed Fishery is managed primarily by the use of input controls in the form of individual transferable effort allocations monitored with a satellite-based vessel monitoring system (VMS) and through a partial closure of the fishery since 1998. It has six licences operated across three vessels that operate within the 60 NM fishery grid blocks that intersect with the OA (Ref. 471). The Pilbara Line Fishery is made up of nine fishing boat licenses that are allowed to operate on an exemption basis that enables them to commercially fish for any nominated five-month block period during the year (Ref. 471).

Subsea infrastructure has been in place within the OA for several years. Installation of Wheatstone and Iago subsea infrastructure was completed in 2015 and installation of the Julimar-Brunello infrastructure was completed in 2016. To date, no incidences of commercial fishing activities interacting with the infrastructure has been communicated to CAPL. Consequently, the continued presence of the hydrocarbon system infrastructure is not expected to result in a significant impact to commercial trawl fishing operations (via loss of catches or damage to fishing equipment). Any deviation required by trawling vessels around the subsea infrastructure is not expected to impact on the functions, interests, or activities of other marine users (as confirmed by stakeholder consultation records).

In summary, the physical presence of the subsea hydrocarbon system is not expected to cause significant impacts to other marine users, and the risks are considered limited with potential

consequences. Therefore, CAPL has ranked the potential consequence to other marine users from physical presence as Incidental (6).		
ALARP decision context justification		
The operation of the subsea hydrocarbon system is commonplace and well-practised nationally and internationally. The control measures to manage the risks associated with unplanned interactions with other marine users are well defined and understood by the industry. During relevant persons consultation, claims were raised regarding ongoing engagement with recreational fishers and the charter industry within the region. This claim was responded to by CAPL (refer to summary in 'external context' below and within appendix d). The risks arising from the physical presence of the subsea hydrocarbon system to other marine users are considered lower-order risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.		
Good practice control measures and source		
Control measure	**Source**	
Relevant Persons Consultation – Ongoing Consultation	Relevant persons will be advised of the commencement of key phases of activities and any relevant Petroleum Safety Zone (PSZ) information. Communicating the activity details, location, and presence of vessels to other marine users ensures they are informed and aware, thereby reducing the risk of unplanned interactions. For planned IMR activities this notification will occur via the biannual project updates provided by CAPL to relevant persons (Table 9-5). For a major repair resulting from an unplanned event, a specific notification will be released detailing the location and duration of any works required (Table 9-5).	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	The subsea infrastructure is located in areas of low commercial trawl fishing activity and covers only a small percentage of fishery management areas. Interaction with subsea infrastructure is expected to be limited based upon operating experience over the past five years. As such, CAPL consider that the likelihood of the consequence occurring is Unlikely (4).	
Risk level	Very low (9)	
Determination of acceptability		
Principles of ESD	The risks associated with this aspect are associated with unplanned interactions causing incidental disruption to other marine users, which is not considered as having the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No legislation or other requirements were considered relevant to this aspect.	
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.	

External context	During relevant persons consultation, RecFishWest raised claims that the presence of recreational fishers and the charter industry within the region requires ongoing engagement on activities planned. This has been covered by the control measure **Relevant Persons Consultation.**	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No impacts to other marine users outside of the OA from petroleum activities	**Relevant Persons Consultation** Relevant persons will be advised of the commencement of key phases of activities and any relevant PSZ information via biannual project updates for planned activities, or specific notification regarding major repair works.	Relevant persons consultation records

7.1.2 Greenhouse gas emissions

The following activities have been identified as direct greenhouse gas (GHG) emission sources for planned hydrocarbon system activities under this EP:

- fugitive emissions.

While CAPL acknowledges that fugitive emissions may occur from the subsea hydrocarbon system in Commonwealth and State waters, these are considered to represent a minor proportion of fugitive emissions for the entire project. Fugitive emissions for the Wheatstone Project are estimated based on accepted NGERS emissions factors methodology, and therefore, any subsea component cannot easily be separated. As such, fugitive emissions estimates have been fully incorporated into the direct and indirect GHG emissions inventories (Sections 7.2.3.4 and 7.2.3.5) and subsequent risk assessment (Section 7.2.3.7) and have not been repeated here.

7.1.3 Planned discharges—Subsea operations

Source

Activities identified as having the potential to result in planned subsea operational discharges are:

- start-up and operations of the hydrocarbon system.

The planned subsea operational discharges include small volumes of control fluids (from the subsea valves).

Potential impacts and risks

Impacts	C	Risks	C
Planned subsea operational discharges may result in: • localised and temporary reduction in water quality and sediment chemistry.	6	A change in ambient water quality may result in: • indirect impacts to fauna arising from chemical toxicity	6

Consequence evaluation

Subsea operational fluid discharges are intermittent, non-continuous, and of short duration, and as such frequency of exposure is limited. Depending on the hydrocarbon system operating conditions, the frequency of valve actuations may range from less than daily to up to several times a day for each valve. Discharge volumes are expected to range from 0.001–0.03 m^3 per discharge, with predicted total volumes from any tree or manifold expected to be ~1–5 m^3 per year, equating to ~15–120 m^3 per year ((Section 3.2.2).

Localised and temporary reduction in water quality and sediment chemistry

The valve discharges occur at the wells or near the drill centres, at water depths of ~119–240 m, and typically 5–7 m above the seabed (based on the size of the infrastructure).

Due to the small discharge volumes within open marine waters (which are typically influenced by large-scale ocean currents and tides [Ref. 411]), rapid dispersion of fluids is expected to occur and the spatial extent of the discharges is expected to be limited to a small area in the water column around the source.

The control fluids comprise primarily a water/glycol mix, at a typical ratio of ~40/60%, excluding minor concentrations of up to ~5% proprietary additives. The reduction in water quality caused by this release is temporary, as these discharges would dilute, disperse, and neutralise rapidly upon release. Based on nearfield dilution modelling, which considers currents, water column depth, discharge height above seabed, physical characteristics of the typical control fluids, and flow rates, a dilution of over 1:500 is anticipated within close proximity to the valve and before any fluids contact any seabed habitats (Ref. 291).

Accumulation of contaminants in sediments depends primarily on the volume/concentration of particulates in discharges or constituents that adsorb onto seawater particulates, the area over which those particulates could settle onto the seabed (dominated by current speeds and water depths), and the resuspension, bioturbation and microbial decay of those particulates in the water column and on the seabed. Valve actuation discharges are frequent but low in volume. Given the frequency and volumes of hydrocarbon releases, accumulation in sediments is not considered likely.

As subsea discharges are highly influenced by natural dispersion and dilution processes, the extent of exposure is most influenced by the volume of the release. Consequently, the planned discharges are expected to result in a limited environmental impact, and the consequence level was determined as Incidental (6).

Indirect impacts to fauna arising from chemical toxicity

As described above, these discharges are expected to result in temporary reductions in water quality within the immediate surroundings of the release location. The extent of this water quality reduction is limited to around the subsea wells and drill centres.

The particular values and sensitivities identified as having the potential to be exposed to these discharges are:

- ancient coastline at 125 m depth contour (KEF)
- continental slope demersal fish communities (KEF)
- commercial fisheries.

Although these KEFs have been identified as having the potential to be exposed, as described in Section 4.3.7.1, the benthic habitat within the OA is known to comprise soft sediment infauna communities that are widespread and homogenous in the region. ROV footage of WST-3 confirms the drill centre is located in a soft-sediment location absent of sessile benthic organisms (Figure 4-20). ROV footage in the area of IAG-1, which is located at ~119 m depth, also confirms that the drill centre is located on soft sediments and sessile benthic organisms have not been noted (Figure 4-19). Given that biologically important habitats tend to be found in areas of rocky escarpment rather than soft sediments, exposure to habitats comprising high levels of diversity are not expected. The *North-West Marine Bioregional Plan* (Ref. 216) does not identify toxicity or chemical pollution/contaminants as a key threat to the continental slope demersal fish communities or ancient coastline at 125 m depth contour KEF. Given the rapid dilution and dispersion conditions, low bioaccumulation potential and the high biodegradability of the control fluids, and intermittent frequency of discharges, bioaccumulation in the receiving environment and sublethal impacts are expected to be limited. Consequently, the release of subsea discharges are expected to result in a limited environmental impact, and the consequence level was determined as Incidental (6).		
ALARP decision context justification		
Subsea operational discharges associated with the operation of subsea infrastructure are commonplace and well-practiced within the industry. The control measures to manage the risk associated with these planned discharges are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL. During stakeholder consultation, claims were raised regarding planned discharges from subsea operations arising from the activity and potential impacts from decreased water quality on commercial fisheries. This claim was responded to by CAPL (refer to summary in 'external context' below and within appendix d). The impacts associated with these discharges are lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.		
Good practice control measures and source		
Control measure	**Source**	
Hazardous materials selection process	As part of the hazardous materials selection process, hazardous materials that will be discharged to the environment will undergo a detailed environmental assessment, as per CAPL's *Hazardous Materials Management Procedure* (Ref. 76).	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	Given the nature and scale of this activity, and with standard control measures in place, it is considered Rare (6) that this discharge would result in any impact to the ecological function of the particular values and sensitivities present within the OA.	
Risk level	Very low (10)	
Determination of acceptability		
Principles of ESD	The potential impacts and risks associated with this aspect is limited to a short-term direct reduction in water quality in a localised area, which is not considered as having the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required	
Relevant environmental	No legislation or other requirements were considered relevant to this aspect.	

legislation and other requirements		
Internal context	This CAPL environmental performance standard / procedure was deemed relevant for this aspect: • Hazardous Materials Management Procedure (Ref. 76).	
External context	During relevant persons consultation, WAFIC raised claims related to potential impacts from decreased water quality on commercial fisheries which is covered by the control measures **hazardous materials selection process.**	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No impacts to marine habitats or marine fauna outside of the OA from subsea discharges during petroleum activities	**Hazardous materials selection process** Hazardous materials planned for discharge to the marine environment are subject to the selection process as per the CAPL's *Hazardous Materials Management Procedure* (Ref. 76).	Hazardous materials selection process assessment records (or similar)

7.1.4 Unplanned release—Loss of containment

Source

Activities identified as having the potential to result in a minor loss of containment (LOC) event:

- start-up and operations of the hydrocarbon system.

Based on the activities described in this EP, the following potential minor LOC scenarios were identified:

- corrosion or mechanical failure/damage of flowlines resulting in a loss of various fluids including condensate, scale inhibitor, control fluids, or MEG[1]
- corrosion or mechanical failure/damage of subsea valves, resulting in loss of control fluids[2]
- corrosion or mechanical failure/damage of onshore trunkline resulting in loss of condensate[3].

[1] A flowline LOC can result in the release of production fluids (gas and condensate): <58 m^3 of condensate over 5.1 days from a leak, or ~58 m^3 of condensate over 2 hours from a full-bore rupture (FBR) (Ref. 501). A flowline release (MEG flowline or umbilical) can result in smaller releases of MEG, process chemicals, and control fluids, estimated to range from 1–25 m^3, based on the volumes contained in the flowlines.

[2] A valve LOC can result in control fluids leaking from the hydrocarbon system, resulting in ~1 m^3 per day. Based on the input from operations and engineering personnel, the approximate worst-case duration is conservatively estimated at ~90 days.

[3] A trunkline LOC (onshore) can result in the release of gas and condensate, ~<100 m^3. This volume is estimated based on flow and pressure at the onshore location, and the time taken to isolate the inventory. This release may occur at any point of the onshore trunkline. However, if this were to occur within the microtunnel section of the trunkline, it is expected that any release would initially be confined to within the concrete coating and drain towards the ocean (due to gravity as the trunkline is angled toward the ocean).

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Unplanned release of hazardous material to the marine environment may result in: • indirect impacts to fauna arising from chemical toxicity	5
		Unplanned release of hazardous material to the onshore environment may result in: • soil and groundwater contamination	5

Consequence evaluation

Potential chemical toxicity

The largest offshore LOC event is estimated to be ~58 m^3 of condensate, and therefore this scenario has been used as the basis of this consequence evaluation. A subsea release of ~58 m^3 of condensate would be expected to temporarily change the water quality within the immediate vicinity of the release.

Previous modelling conducted for the Gorgon Project, for a 50 m^3 subsea release of condensate, predicted that the extent of exposure to the condensate was limited to within 22 m of the release location (Ref. 410). Given the depths and environmental conditions of the Gorgon field, it is expected that a similar extent of exposure would occur for a subsea release within the Wheatstone OA.

The values and sensitivities within the OA with the potential to be exposed to decreased water quality from an unplanned subsea LOC release include:

- Humpback Whale (migration)
- Pygmy Blue Whale (migration)
- Flatback Turtle (internesting buffer, nesting)
- Hawksbill Turtle (internesting buffer)
- Whale Shark (foraging)
- ancient coastline at 125 m depth contour (KEF)

- continental slope demersal fish communities (KEF)
- Montebello AMP
- commercial fisheries.

Based on the nature of these unplanned releases, which are non-continuous and expected to occur in a location where no specific sedentary behaviours for values and sensitivities have been identified, the extent and severity of any potential impact is expected to be limited.

Given the nature of unplanned releases covered under this EP and the transient nature of identified values and sensitivities, fauna would need to pass directly through the plume almost immediately upon release to be impacted.

Any potential impact from such an event is expected to be limited, thus the consequence level was determined as Minor (5).

Soil and groundwater contamination

The largest onshore LOC event is estimated to be ~100 m^3 of condensate, and therefore this scenario has been used as the basis of this consequence evaluation.

The spatial extent of an onshore release would be limited to a relatively confined area around the trunkline fault.

The trunkline exits the microtunnel and remains buried onshore before emerging above ground just before the onshore endpoint. As such, the only location where a surface release of condensate could occur is from this above-ground section of the trunkline. Any surface release would be to hardstand areas and captured within the MHF bunded drainage system and would not be released to the environment. Any surface release of condensate would also be expected to evaporate rapidly given the volatility of the hydrocarbon. As such, no impact to soil or groundwater from a surface minor LOC event is expected to occur.

For a subsurface release, as the condensate is not exposed directly to air, evaporation will be minimal and the majority is likely to dissipate into the surrounding soil. The surrounding and underlying native soils are soft to medium clays and silts with an estimated hydraulic conductivity of ~0.4 m/day. The trunkline is situated an average of 3.5 m above groundwater level. Therefore, based on the hydraulic conductivity of native underlying soils it is estimated that for a minor LOC event, it would take ~9 days to reach groundwater. CAPL does not consider this to be a credible scenario given the inherent response activities associated with a LOC event. Using a 2–4 day period (i.e. allowing for time to detect and isolate the trunkline [typically within hours], and to implement a response including the removal of contaminated soils [typically hours to days]), the condensate is estimated to travel 0.8–1.6 m below the trunkline, which is well above the groundwater level, and as such no exposure to groundwater is expected to occur from the subsurface minor LOC event.

While vertical movement of the condensate is considered more likely, it is noted that condensate may find preferential pathways horizontally within the bedding and initial backfill material (sand to fine earth) surrounding the trunkline. As a conservative estimate, by assuming the same hydraulic conductivity for both vertical and horizontal transport, the zone of potential impact could extend 0.8–1.6 m around the trunkline.

No specific values or sensitivities (e.g. TECs) are present within the onshore OA.

Given the limited spatial exposure, buried trunkline, and the previously disturbed nature of the receiving environment, any potential impact from an onshore minor LOC event are expected to the limited. As such, the consequence level was determined as Minor (5).

ALARP decision context justification

The operation of hydrocarbon systems is commonplace and well-practiced within the industry. The control measures to manage the risk associated with these unplanned discharges are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding planned discharges from subsea operations arising from the activity.

The impacts associated with these discharges are lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source

Inspection and Monitoring Plans (IM Plans)	Inspections provide assurance that assets are in good condition and proactively identify maintenance or repair activities that may be required. The type and frequency of inspections of the hydrocarbon system will be undertaken in accordance with the IM Plans (Ref. 493, Ref. 103). The IM Plans also require that hydrocarbon system process monitoring (pressure, temperature and flow rates), fluid composition and dryness monitoring, and corrosion monitoring are undertaken. Inspection and monitoring results are assessed against acceptance criteria to allow early identification and management of potential anomalies through engineering assessment, maintenance, and repairs to ensure the integrity of the hydrocarbon system and prevent a LOC. Inspections are tracked via the computerised maintenance management system (CMMS).
Isolation valve function and verification tests	As mentioned in Sections 3.2.1.5, 3.2.2.3, and 3.3.2.9, the hydrocarbon system includes isolation valves to shut in inventories in the event of a release. This isolation can reduce the potential volumes of fluids released to the environment. If a spill is detected from the hydrocarbon system, these valves can be operated to potentially limit the volume released, as actioned through Source Control Procedures. Verification of the performance of these valves, including emergency isolation and shut down functionality, will be tested before introducing hydrocarbons.
Source control	Source control is part of the first actions taken to minimise the volume of fluids released and therefore reduce potential impacts and risks to the environment. CAPL has developed emergency operating procedures (EOPs) (Section 9.3.2.8) that provides guidance to operations personnel to detect, isolate, and stabilise non-routine events such as trunkline/flowline LOC scenarios. Source control is the initial action for spills and will be undertaken in accordance with documented EOPs including *Operability, Reliability, Maintainability – 1060 Platform – Response To Emergency Shutdown (ESD1)* (Ref. 118), which outlines the procedure for isolating and shutting down Wheatstone and Iago or third-party systems if required to manage the risk.
Emergency Response Plan (ERP)	Plans, processes, and procedures outline activities to control and respond to minor operational spills and are essential in ensuring a coordinated, consistent approach. For onshore spills, response activities will be undertaken in accordance with the *Emergency Response Plan – Wheatstone LNG Plant* (Ref. 95).
Minor LOC recovery	In the event of an onshore minor LOC, response and recovery shall be implemented in accordance with Section 3.1 of the *Wheatstone Operations – Downstream Green Guide Environmental Manual* (Ref. 112). This includes containment, clean-up, waste disposal, and reporting requirements.
Oil spill contingency plan (OSCP)	Under the PPER, DMPE require that the petroleum activity have an accepted OSCP in place before commencing the activity. In the event of an onshore LOC, response and recovery shall be implemented in accordance the onshore OSCP as described in Section 9.3.8.8 of this EP.
OPEP	Under the OPGGS(E)R and the PSLER, NOPSEMA and DMPE require that the petroleum activity have an accepted OPEP or OSCP (respectively) in place before commencing the activity. In the event of an offshore LOC, response and recovery shall be implemented in accordance the OPEP (Ref. 102).

	CAPL has developed the *Chevron ABU Consolidated OPEP* (Ref. 102) to support all spill response activities across all its assets. This OPEP covers the response to hydrocarbon releases to marine or coastal environments (within both State and Commonwealth waters), from assets/activities under CAPL operational control, where a coordinated response may be required.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	The likelihood that a minor LOC event results in an Minor (5) consequence was determined to be Remote (5). With the control measures in place, it was considered unlikely that a minor LOC event associated with this activity would occur, and even more unlikely that such an event would impact any of the identified values and sensitivities.	
Risk level	Very low (9)	
Determination of acceptability		
Principles of ESD	The risks associated with this aspect are expected to have a limited environmental impact, and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no additional evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No legislation or other requirements were considered relevant to this aspect.	
Internal context	These CAPL management processes or procedures were deemed relevant for this aspect: • IM Plans (Ref. 493, Ref. 103) • EOPs (Ref. 118) • *Emergency Response Plan – Wheatstone LNG Plant* (Ref. 95) • *Wheatstone Operations – Downstream Green Guide Environmental Manual* (Ref. 112) • OPEP (Ref. 102).	
External context	During stakeholder consultation, no objections or claims were raised regarding LOC management arising from the activity	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No unplanned release of hydrocarbons / hazardous materials to the environment during petroleum activities	**IM Plans** Inspection and maintenance will include, but not be limited to: • a post-start-up inspection of the subsea hydrocarbon system within 24 months of start-up	CMMS records confirm: • a post-start-up inspection of the subsea hydrocarbon system within 24 months of start-up • inspections of the onshore PL 99 pipeline licence area

	• inspections of the onshore PL 99 pipeline licence area in accordance with the IM Plans	are undertaken in accordance with the IM Plans
	IM Plans Monitoring of hydrocarbon system pressure, temperature, flow rates and fluid composition against acceptable criteria and limits will be aligned with the IM Plans	Records confirm monitoring of hydrocarbon system pressure, temperature, flow rates and fluid composition against acceptable criteria and limits are aligned with the IM Plans
	Isolation valve function and verification tests Isolation valves are tested to verify valve integrity and functionality prior to the introduction of hydrocarbons	Integrity test records for the isolation valves confirm testing and valve functionality prior to the introduction of hydrocarbons
Reduce the risk of impacts to the environment from the unplanned release of hydrocarbons / hazardous materials during petroleum activities	**Source control** The isolation steps of the source control / isolation procedures implemented within 30 mins if a spill is detected from the hydrocarbon system	Records demonstrate relevant isolation components of the source control procedures are implemented if a spill is detected from the hydrocarbon system.
	ERP Onshore trunkline spill response implemented as outlined in the *Emergency Response Plan – Wheatstone LNG Plant* if a spill is detected from the hydrocarbon system	Records confirm onshore trunkline spill response is undertaken in accordance with the *Emergency Response Plan – Wheatstone LNG Plant*
	Minor LOC recovery In the event of an onshore minor LOC, containment, clean-up, waste disposal, and reporting requirements will be implemented in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual*	Records confirm that response and recovery activities were implemented in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual* in the event of an onshore minor LOC
	OSCP In the event of an onshore spill occurring, the OSCP will be implemented	Records confirm the OSCP has been implemented
	OPEP In the event of an offshore spill occurring, the OPEP will be implemented	Records confirm the OPEP has been implemented

7.2 Platform

7.2.1 Physical presence—Other marine users

Source

Activities identified as having the potential to result in an interaction with other marine users are:

- permanent presence of the platform within the OA.

Potential impacts and risks

Impacts	C	Risks	C
N/A	–	Unplanned interactions with other marine users may result in: • disruption to commercial shipping and fishing vessels	6

Consequence evaluation

The spatial extent of the platform PSZ equates to ~0.79 km^2 (500 m PSZ).

Disruption to commercial shipping and fishing vessels

As identified Section 4.4.1, there are two State commercial fisheries (Pilbara Line Fishery, Pilbara Trap Managed Fishery) that have recent fishing effort that overlaps with the OA. The extent to which the PSZ overlaps the management areas for these fisheries is estimated to be <1%.

The OA overlaps the fisheries management areas of three Commonwealth Fisheries. As identified in Section 4.4.1, only one of these Commonwealth managed commercial fisheries (North West Slope Trawl Fishery) has recorded fishing effort within the OA during 2018–2023 (Ref. 2). Fishing activity within the Commonwealth trawl fisheries is restricted to waters >200 m water depth. The platform, and its exclusion area is in water depths ~70 m. Therefore, the presence of the platform is not expected to cause any disruption to the North West Slope Trawl Fishery vessels or activities.

The installation of the platform was completed in 2015 and to date no incidences of commercial fishing activities interacting with the infrastructure have been recorded. Consequently, the continued presence of the platform is not expected to result in a significant impact to commercial operations (via loss of catches). Any deviation required by these vessels around the platform is not expected to impact on the functions, interests, or activities of other marine users (as confirmed by stakeholder consultation records).

The platform is located outside major shipping lanes and commercial marine traffic density around the platform is low (Section 4.4.2) indicating that it is not expected to affect major shipping channels or commercial shipping operators. Any deviation required by these vessels is not expected to impact on the functions, interests, or activities of other marine users (as confirmed by stakeholder consultation records).

In summary, the physical presence of the platform is not expected to cause significant impacts to other marine users, and the risks are considered limited with potential consequences. Therefore, CAPL has ranked the potential consequence to other marine users from physical presence as Incidental (6).

ALARP decision context justification

The operation of offshore facilities is commonplace and well-practised nationally and internationally. The control measures to manage the risks associated with unplanned interactions with other marine users are well defined and understood by the industry.

During stakeholder consultation, no objections or claims were raised regarding disturbance/disruption to other marine users arising from the petroleum activity.

The risks arising from the physical presence of subsea infrastructure and support vessels to other marine users are considered lower-order risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source	
Control measure	**Source**
CMMS	Ongoing maintenance of the platform navigation equipment ensures equipment is operational and provides situational awareness of maritime traffic movements, thereby reducing the risk of interference with other marine users. The equipment standards of performance are included in the CMMS. Maintenance activities are managed through the CMMS (described in Section 9.3.2.3), which is used as the main asset and inventory management system within CAPL for performing and tracking maintenance activities.
Relevant Person Consultation – Ongoing Consultation	Relevant persons will be advised of the commencement of key phases of activities and any relevant PSZ information. Communicating the activity details, location, and presence of vessels to other marine users ensures they are informed and aware, thereby reducing the risk of unplanned interactions.

Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A

Likelihood and risk level summary	
Likelihood	The platform is located outside major shipping lanes and high density shipping areas, and in an area of limited commercial fishing activity. The installation of the platform was completed in 2015 and to date no incidences of interaction with the infrastructure has been recorded. As such, CAPL consider that the likelihood of the consequence occurring is Unlikely (4).
Risk level	Very low (9)

Determination of Acceptability	
Principles of ESD	The risks associated with this aspect are associated with unplanned interactions causing incidental disruption to other marine users, which is not considered as having the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.
Relevant environmental legislation and other requirements	No legislation or other requirements were considered relevant to this aspect.
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.
External context	No objections or claims were raised regarding interaction with other marine users arising from the permanent presence of the platform.
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.

Environmental performance outcome	Performance standard / Control measure	Measurement criteria
No impacts to other marine users outside of the OA from petroleum activities	**CMMS** Platform radar, navigational lighting and audio navigational equipment is maintained in accordance with the CMMS.	CMMS records show platform radar, navigational lighting and audio navigational equipment is maintained
	Relevant Persons engagement Relevant stakeholders will be advised of the commencement of key phases of activities and any relevant PSZ information	Relevant persons consultation records

7.2.2 Air emissions

Air emissions from the platform will include criteria pollutants (e.g. oxides of nitrogen, carbon monoxide), air toxics (e.g. benzene, toluene, xylenes) and greenhouse gases (primarily carbon dioxide). Greenhouse gas emissions are risk assessed separately within Section 7.2.3.

Air emissions will occur at the platform predominantly from gas turbine exhausts and flaring (described in Section 3.3). The gas turbines are used to drive the electricity generators and the natural gas export compressors. The flare is used to safely dispose small flows of waste gas and to safely depressurise the facility in the event of a process upset. The compressors have not been required throughout the early years of operation however will now be progressively ramped up. Full compression is estimated to occur from around 2029.

Air emissions are associated with release from flares (HP and LP), gas turbine generator exhaust (x3), compressor turbine exhaust (x2), and fugitive emissions. The emissions profile will vary throughout the operational life of the facility dependant primarily upon the amount of compression required, and flaring rates.

Without compression a significant proportion of the natural resource would remain undeveloped. CAPL have identified that at the current time there are no reasonably practicable alternatives to compression available for implementation at the platform.

As described in Section 3.3.2.3, two flares (HP and LP) are used on the platform. The HP flare is used for upset, relief, and blowdown loads, and is therefore considered a safety critical element for platform operations. Blowdown flaring throughout operations to date has been a rare occurrence, while hydrate inhibition of flowlines using MEG has proven an effective management measure, further reducing the need to depressurise via the HP flare. At the current time, there is no reasonably practicable alternative to the use of the HP flare from a safety and integrity perspective. However, even if it were possible, this action would not be expected to result in a material reduction of impacts associated with air quality or greenhouse gas emissions.

The LP flare is used on a continuous basis for waste gas streams. LP flaring is inherent to the platform design associated with vessel blanketing and the induced gas flotation where fuel gas is applied for secondary produced water treatment. Alternative off-gas recovery systems to eliminate LP flaring were considered during FEED (Ref. 113). However, for the alternative designs involving off-gas recovery, the environmental benefit gained from a reduction in LP flaring emissions would be counteracted by increased power generation emissions associated with running the gas recovery compressors. Additionally, increased safety risks are associated with potential leak sources and potential exposure of the waste gas stream to personnel. Therefore, the use of an off-gas system is not considered to be a practicable alternative. The environmental benefit of a reduction in LP flaring would have negligible effects on air quality and greenhouse gas emissions.

An updated forecast of air emissions (i.e. key criteria pollutants, and air toxics) is shown in Table 7-2 for the free flow (based on historical reported actuals), early compression, and full compression operating scenarios.

Table 7-2: Summary of estimated annual platform air emissions

Emission	Units	Free-Flow (FY22)	Early compression (FY23-25)	Full compression (FY26+)
Key criteria pollutants and air toxics				
Carbon monoxide (CO)	tpa	691	358	487
Nitrogen oxides (NO_x)	tpa	210	515	1,019
Particulate matter <10 microns (PM_{10})	tpa	20	7	9
Particulate matter <2.5 microns ($PM_{2.5}$)	tpa	20	6	9
Volatile organic compounds (VOCs)	tpa	1,151	577	580
Sulfur dioxide (SO_2)	tpa	0.28	0.42	1.22

Timing for the early and full compression stages has been estimated based on contemporary data, however is dependent upon reservoir performance hence subject to change.

7.2.2.1 Guidelines—criteria pollutants

When considering the management of criteria pollutant air emissions, the National Environment Protection (Ambient Air Quality) Measure (NEPM AAQ) establishes quantifiable standards and goals against which ambient air quality can be assessed. The NEPM AAQ is aimed at achieving ambient air quality that allows for the adequate protection of human health and wellbeing. However, in the absence of other standards relevant to the air shed surrounding the platform, it is considered appropriate to use these standards as the criteria for comparison in this air quality assessment.

7.2.2.2 Risk assessment

Source

Activities identified as having the potential to result in air emissions from the platform are:

- combustion of natural gas as a fuel source
- flaring.

Potential impacts and risks

Impacts	C	Risks	C
Air emissions may result in: • localised and temporary reduction in air quality	6	• N/A •	–

Consequence evaluation

Localised and temporary reduction in air quality

Impacts from air emissions (criteria pollutants – including oxides of nitrogen, carbon monoxide and particulate matter and air toxics – including benzene) depend on discharge volume, frequency, duration of exposure, as well as the location and nature of the receiving environment. Air quality changes associated with emissions of criteria pollutants and air toxics are limited to the air shed local to the platform.

Reservoir characterisation of Wheatstone fields indicates minimal levels of hydrogen sulfide in the reservoir fluids (<2 ppm) (Ref. 114). As such, combustion of the natural gas at the platform results in correspondingly low-level emissions of sulfur dioxide. For this reason, potential emissions of sulfur dioxide from the platform are not considered significant and not evaluated further.

Air emissions dispersion modelling was performed based on system design to quantify and assess impacts from air emissions from the platform. Model assumptions and have been reviewed and modelling remains a conservative approach for the updated emissions forecast, and appropriate for comparison of the predicted emissions against guidelines. Modelling was conducted using a Gaussian, steady-state plume model (Ref. 59), using 1 year of meteorological data to capture most weather conditions and extended to an approximate grid of 25 km by 25 km surrounding the platform.\Nitrogen dioxide, carbon monoxide, particulate matter and VOC were modelled using conservative emission rates in a screening approach. Nitrogen dioxide emissions from the facility were modelled on the assumption that all NO_x are present as NO_2. This assumption is conservative as the conversion of NO to NO_2 will be limited by the available O_3, allowing only a fraction of the available NO to react (~15–20%). VOC emissions modelling outputs can be evaluated against relevant NEPM standards by considering all emitted VOC is present as either benzene, toluene or xylene. This is a highly conservative approach given these constituents account for less than 1% of VOC emissions as reported.

Modelling predicted maximum ambient concentrations to be substantially below the NEPM AAQ standards. Results included:

- a maximum ambient NO_2 concentration of 0.02 ppm (compared to the NEPM 1 hour standard of 0.12 ppm)
- a maximum ambient CO concentration of 0.01 ppm (compared to the NEPM 8-hour standard of 9 ppm)
- a maximum ambient PM_{10} concentration of 0.14 µg/m^3 (compared to the NEPM 24-hr standard of 50 µg/m^3). While not modelled similar results would be expected for $PM_{2.5}$ (compared to the NEPM 24-hour standard of 25 µg/m^3).
- a maximum ambient VOC concentration of 0.16 ppb (compared with 3 ppb, 100 ppb and 200 ppb NEPM annual standards for benzene, toluene and xylene respectively)

Modelling demonstrates the concentrations of oxides of nitrogen, carbon monoxide, particulate matter and VOC's are predicted to be well below NEPM AAQ standards indicating there will be no significant degradation of ambient air quality. Updated emissions forecast data affirms emissions estimates for early and late compression will be similar in magnitude to those modelled prior to operations.

The potential consequence of the air emissions from the platform causing air quality changes is therefore ranked as Incidental (6).

ALARP decision context justification

Offshore facility operations and subsequent air emissions arising from these facilities are commonplace both internationally and nationally. The control measures to manage the risk associated with air emissions are well defined and are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding air emissions arising from the activity.

The impacts and risks arising from air emissions constitute lower-order impacts (Table 5-3). As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Energy efficient design	During the design phase for the Wheatstone Project, energy efficient design features were incorporated to minimise power demand and in turn air emissions. Specifically, some of the equipment installed included the waste heat recovery units (WHRUs), high integrity valves and flanges, seawater heat exchange and lift pump configuration, aero derivative turbines, variable compression modes, condensate export pumps with variable speed drive.
CMMS	To ensure that all energy efficient features are operating appropriately, preventative maintenance regimes have been developed and incorporated into the CMMS. Maintenance activities are managed through CMMS which is used as the main asset and inventory management system within CAPL for performing and tracking maintenance activities.
Air emissions monitoring	The Platform Air Emissions Monitoring Program (Section 9.4.1.2) is designed to meet emissions reporting requirements. Gas compressor

	turbines, power generation turbines, diesel system, LP flared gas and HP flared gas, and pilot gas and purge gas are monitored to inform emissions reporting and management.	
Platform emissions management	An *Emissions and Energy Management Plan* (EEMP) (Ref. 117) for the Wheatstone Platform accounts for all key GHG emission sources on the Platform, and describes the process for emissions allocation and reporting, emissions tracking and deviation management, and links to management of change processes and revision triggers to ensure that emissions are managed to ALARP. It includes an emissions management section involving setting of performance standards/targets for platform emissions and regular monitoring of performance against these standards to ensure that emissions are minimised as far as reasonably practicable. As part of emissions management, a leak detection and repair (LDAR) program is in place for the Wheatstone Platform. The LDAR program is implemented to detect fugitive emissions, and address the subsequent management or repair of sources of fugitive emissions.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	N/A	
Risk level	N/A	
Determination of acceptability		
Principles of ESD	The impact associated with this aspect is limited to a direct reduction in air quality for a localised area, which is not considered to have the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered relevant to this aspect include: • *National Environment Protection (Ambient Air Quality) Measure* • National Pollutant Inventory (Ref. 171).	
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • Wheatstone Platform *Emissions and Energy Management Plan* (Ref. 117).	
External context	No objections or claims were raised regarding air emissions arising from the platform.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No impacts to air quality outside of the OA from petroleum activities	**Energy efficient design** The energy efficient design features (including the WHRUs, valves and flanges, seawater lift pumps, aero derivative turbines, condensate export pumps) are installed, tested and commissioned according to the	Records show installation is according to Commissioning Test Procedures

	relevant Commissioning Test Procedures prior to hydrocarbon production	
	CMMS The compressors, power generators, flaring system, WHRUs and seawater lift pumps are maintained in accordance with CMMS	CMMS records show maintenance of compressors, power generators, flaring system, WHRUs and seawater lift pumps
	Air emissions monitoring Platform Air Emissions Monitoring Program implemented as per Section 9.4.1.2	Records confirm Air Emissions Monitoring Program is implemented
	Platform emissions management Platform emissions management will be implemented per the Wheatstone Platform EEMP, including monitoring performance against emissions targets, and managing emissions to ALARP	Records confirm the Wheatstone Platform EEMP is implemented

7.2.3 Greenhouse gas emissions

7.2.3.1 National Strategies

In 2024, the Australian Government released its Future Gas Strategy (Ref. 509), an evidence-based framework that will underpin future government policies and actions. The strategy "establishes the role gas will play in the transition to net zero by 2050, securing affordable gas for Australia as we [Australia] move to a more renewable grid, and confirming our [Australia's] commitment to being a reliable trading partner" (Ref. 510). The strategy identifies that Australia will need gas through to 2050 and beyond; noting that the role of gas will change, and gas-related emissions must decline, as Australia transitions to net zero (Ref. 509). Gas, however, is forecast to play an important role in firming renewable power generation and is needed in hard-to-abate sectors like manufacturing and minerals processing until such time as alternatives are viable and can be deployed at scale (Ref. 510). Sixty percent of Australia's gas reserves are in WA (Ref. 511).

Natural gas supports the standard of living and energy security (providing over a quarter of energy needs) in Australia (Ref. 509). Gas provides a "crucial role in supporting our [the Australian] economy, with the sector employing 20,000 people across the country, including remote and regional communities" (Ref. 510). Gas is also considered crucial for a Future Made in Australia as it supports manufacturing, food processing, and refining of critical minerals (Ref. 510). The Future Made in Australia plan is about maximising the economic and industrial benefits of the move to national net zero and securing Australia's place in a changing global economic and strategic landscape (Ref. 512).

The Australian Government has developed a Net Zero Plan, which sets out a pathway and actions to Australia's 2035 emissions reduction target and to net zero GHG emissions by 2050 (Ref. 535). The Net Zero Plan identifies five decarbonisation priorities: clean electricity across the economy, lowering emissions by electrification and efficiency, expanding clean fuel use, accelerating new technologies, and net carbon removals scaled up (Ref. 513). The Plan states that "[n]atural gas remains an important contributor to Australia's economy and energy security throughout the transition to net zero, but its role changes and overall use declines" and that "[n]atural gas users will transition at different times due to the relative cost of natural gas and electricity, the availability and affordability of alternative technologies and fuels, and the timing of asset turnover" (Ref. 513).

Six sectoral emissions reduction plans support the Net Zero Plan: electricity and energy, agriculture and land, the built environment, industry, resources, and transport. The Resources Sector Plan (Ref. 514) covers exploration, production, and decommissioning of gas (as well as minerals, oil and coal) resources; and is relevant to Scope 1 GHG emissions from this sector. The Electricity and Energy Sector Plan (Ref. 515) covers use of associated products (e.g. domestic gas).

7.2.3.2 International treaty and Australian regulatory framework

Paris Agreement

Australia is a party to, and has ratified, the Paris Agreement. The Paris Agreement is an international treaty on climate change that entered into force in November 2016 (Ref. 516). Article 2 of the Paris Agreement states that it "aims to strengthen the global response to the threat of climate change, in the context of sustainable development and the efforts to eradicate poverty, including by "… holding the increase in the global average temperature to well below 2°C above pre-industrial

levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." (Article 2; Ref. 517).

Australia submitted its first Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015 and submitted an update in July 2022. The updated NDC committed Australia to reduce its emissions to 43% below 2005 levels by 2030 (Ref. 518). This 2030 commitment is both a single-year 'point' target to reduce emissions 43% below 2005 levels by 2030, and a multi-year 'emissions budget' from 2021–2030 (based on a 43% reduction by 2030, the indicative emissions budget for this period is 4,353 Mt CO2-e)[17]. Within the NDC submission, Australia also reaffirmed its target to achieve net zero emissions by 2050 (Ref. 518). In September 2025, Australia submitted its second NDC to the UNFCCC. Australia's 2035 commitment is a "[r]eduction in net national greenhouse gas emissions of 62–70% below 2005 levels by 2035, implemented as an emissions budget covering the period 2031–35" (Ref. 519).

Australia regularly reports to the UNFCCC on climate change policies and measures. The National Inventory Report 2023 (Ref. 520) was submitted to the UN Climate Change secretariat in May 2025. The estimated net annual GHG emissions for FY2023 were 453.4 Mt CO2-e; this is a 25.9% decrease from 611.9 Mt CO2-e in FY2005 (Ref. 520). Australia's net emissions peaked in FY2006 and have generally been on a long-term decline since that financial year (Ref. 520).

Climate Change Act 2022 (Cth)

The Climate Change Act 2022 (Cth) sets out Australia's GHG emissions reduction targets in a manner consistent with the Paris Agreement and Australia's 2030 NDC under that agreement .

Australia's GHG emissions reduction targets are:

- reduce net GHG emissions to 43% below 2005 levels by 2030, which is implemented as a point target as well as an emissions budget covering the period 2021–2030.
- reduce Australia's net GHG emissions to zero by 2050.

Under the Climate Change Act 2022 (Cth) the Minister must prepare an annual climate change statement. The 2024 Annual Progress Report (Ref. 518), prepared by the Climate Change Authority and provided to the Minister in November 2024 stated that "emissions are falling but not yet at the rate required to meet Australia's 2030 emissions reduction target" (Ref 521).

NGER and safeguard mechanism schemes

The National Greenhouse and Energy Reporting (NGER) scheme is the Australian Government's national framework for reporting facility information about GHG emissions, energy production, and energy consumption. The scheme is administered through the NGER Act (Cth) and associated regulations.

The Safeguard Mechanism is the Australian Government's scheme that requires relevant industrial facilities to reduce their emissions in line with Australia's GHG emission reduction targets. The Safeguard Mechanism applies to industrial facilities that emit more than 100,000 tonnes of carbon dioxide equivalent (CO2-e) in a year.

[17] Note: Following FY2024 revisions to Australia's historical GHG emissions estimates, Australia's implied GHG emissions budget is 4,377 Mt CO_2-e (Ref. 524 Ref. 525).

The Safeguard Mechanism commenced in 2016 and was reformed in 2023. The Safeguard Mechanism is enacted through the NGER Act, as amended by the Safeguard Mechanism (Crediting) Amendment Bill 2023 (Cth); and with additional scheme details as set out in the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Cth).

Safeguard Mechanism facilities have an annual net GHG emission limit known as a 'baseline'. As part of the 2023 reforms, a decline rate is now applied to a facilities baseline so that it is reduced over time on a trajectory consistent with achieving Australia's emission reduction targets (Ref. 522). In general, baselines will decline by 4.9% each financial year from FY2024 through to FY2030. The subsequent decline rate will be set in 5-year blocks consistent with updates to Australia's NDC under the Paris Agreement (Ref. 522).

The 'Wheatstone Operations Facility' is registered with the Clean Energy Regulator (CER) as a facility under both the NGER and Safeguard Mechanism schemes. The scope of the Wheatstone Operations Facility includes GHG emissions from both the onshore Wheatstone LNG Plant at Ashburton North, as well as from any activities or facilities in Commonwealth waters, including the Wheatstone Platform. The Wheatstone Operations Facility has a 'production-adjusted baseline' established under the reformed Safeguard Mechanism. This production-adjusted baseline for FY2024 was ~4.07 Mtpa CO2-e, inclusive of the 4.9% decline. The CER will calculate the production-adjusted baseline for FY2025 following submission (due 31 October 2025) of the FY2025 NGER and Safeguard Mechanism production variables.

All Safeguard facilities' net emissions must be at or below baselines by the annual deadline. Responsible emitters of facilities that exceed or expect to exceed their baselines must manage their excess emissions. Responsible emitters can:

- surrender of Australian carbon credit units (ACCUs) or Safeguard Mechanism credit units (SMCs)
- apply for the use of a flexibility measure under the scheme (e.g. borrowing baseline from the following year, or extending the facility's baseline under a multi-year monitoring period).

Each ACCU or SMC represents one tonne of CO2-e that has been stored or avoided. These credit units are surrendered to the Australian National Registry of Emissions Units, and are then permanently cancelled, thereby removing them from circulation and preventing their reuse.

WA GHG emissions policy for major projects

The WA State Government released an amended Greenhouse Gas Emissions Policy for Major Projects in October 2024 (Ref. 523). The intent of this revised policy is to remove duplication in GHG emissions management by the State and Commonwealth governments. Where GHG emissions of a major proposal that is being (or has been) assessed under Part IV of the EP Act (WA), and that proposal is subject to alternative regulatory measures (i.e. the Safeguard Mechanism), the State will no longer apply conditions to reduce net GHG emissions

For existing projects, including the Wheatstone Project, the State Government has initiated a review of existing Ministerial Statements under section 46 of the EP Act (WA) to align requirements with the amended policy. At the time of writing this EP, the section 46 process is underway for the Wheatstone Project; however, no

changes to existing approval conditions have been finalised or published (i.e. the existing approval conditions remain in place).

7.2.3.3 Emissions boundaries

One of the main principles of GHG accounting and reporting is relevance, of which an integral aspect is defining an appropriate GHG emissions inventory boundary (Ref. 502).

The primary environmental approvals under both the Commonwealth EPBC Act and the WA EP Act were assessments based on project-level emissions. Under a secondary approval, such as this EP, the emissions boundary for a GHG assessment is inherently different from and more limited in scope than that of the primary approvals, as the EP covers only a subset of activities (as described in Section 3) associated with the Wheatstone Project. Consequently, the appropriate emissions boundary for this EP is also bound by this subset of activities.

It is also noted that when assessing at this activity-level, what may be characterised as an indirect emission under this EP, may become a direct emission associated with a different secondary approval (activity-level) or primary approval (project-level) boundary. Therefore, the GHG emissions inventory in this EP is presented with respect to direct and indirect emissions only and does not correspond to the internationally recognised scopes. The GHG emissions inventory in this EP will also not directly equate to values presented within primary environmental approvals, or to those reported under other (e.g. NGER scheme) legislation due to the differing boundaries and facility definitions. The direct and indirect emission sources that form the inventory for this EP are identified within the relevant subsections of Section 7.

While emission assessment boundaries and inventories may vary, the control measures adopted to manage GHG emissions to an ALARP and acceptable level are predominantly the same across primary and secondary approvals, as management typically occurs at the project level, and not at individual activity level.

7.2.3.4 Direct emissions

As described above, CAPL has defined the emissions boundary for the assessment of direct GHG emissions in relation to the planned petroleum activities[18] within the OA as described in Section 3. Any unplanned activities, including repairs, or emergency events, have been excluded from the emissions inventory.

The following activities have been identified as direct emission sources[19] for planned platform activities under this EP:

- flaring
- gas compressor turbines
- gas turbine generators

[18] Where ‘petroleum activity’ is as defined within Regulation 4 of the OPGGS(E)R.

[19] The inventory provided is consistent with aspects reported under the National Greenhouse and Energy Reporting scheme for the Wheatstone Project. While planned helicopter operations (as described within Section 3.6.2) are associated with platform activities under this EP, this emission source is a minor contribution (~0.0003 Mtpa) and has not been incorporated into the subsequent forecast emissions shown in Table 7-3 and Table 7-4: .

- other (e.g. fugitives, diesel use for back-up generators, firewater pumps, cranes, vessels).

The compressors have not been required throughout the early years of operation, however, will be progressively ramped up, with full compression estimated to occur from around FY27.

Operational emissions performance from the first years of operation is presented in Table 7-3, aligned to financial year as per NGER reporting. Emissions estimates have been forecast in consideration of the operational performance of plant and equipment, and based on planned operating scenarios (i.e. compression stages and timing). A forecast of GHG emissions for the platform by point source type is shown in Table 7-4 for free flow, early compression, and full compression operating scenarios.

Flared emissions are forecast to reduce from the prior period due to rectification of passing valves on the HP flare. The 'other emissions' category was forecast to increase slightly associated with revised NGER fugitive reporting requirements for platforms and produced water which will apply to the FY22 reporting year onwards. Updates to compressor emissions forecasts were made based on contemporary data including equipment configuration and forecast operating conditions, and the projected timing for compression stages which is a function of reservoir performance and arriving fluid characteristics. This involved integrating contemporary reservoir performance data from the Julimar-Brunello and Wheatstone-Iago fields, and re-validated compressor power requirements for the projected stages. Additional modelling of system performance was undertaken to validate key assumptions, and thereby forecast emissions. In early compression, power requirement of the smaller bundle (single compressor) was evaluated for the suction pressures that the compressor is likely to run at. In full compression, the compressor bundle is to be changed out for one of larger capacity, and a second compressor is anticipated to come online whereupon both compressors will be fully loaded. The timing for full compression is contingent upon reservoir performance outcomes.

Based on the forecast emissions estimates, annual direct GHG emissions for the activities under this EP are ~0.20–0.41 Mtpa CO_2-e (Table 7-4:). In acknowledgement of the uncertainty in forecasting emissions, for the purposes of the risk assessment in Section 7.2.3.7, CAPL have evaluated the long-term annual emissions estimate from the primary approval of 0.45 Mtpa CO_2-e (Ref. 57; Section 7.2.3.6).

Planned activities under this EP are not expected to significantly vary, such that it would result in a significant change to the estimated annual direct emissions over the next five-year in-force period of this EP. The Wheatstone Project has approval to operate until 2060 (Section 7.2.3.6).

Table 7-3: Annual platform greenhouse gas emissions to date

Emission (t CO_2e)	FY18	FY19	FY20	FY21
Flaring	100,979	54,176	300,107	306,503
Compressor Turbines	-	-	-	-
Gas Turbine Generators	45,037	49,456	52,135	52,153
Other emissions	10,311	5,554	4,739	4,775
Total	**156,327**	**109,187**	**356,981**	**363,430**

Table 7-4: Summary of estimated annual GHG emissions by point source type

Emission (t CO_2e)	Units	Free-Flow (FY23)	Early compression (FY24-26)	Full compression (FY27+)
Flaring	t CO_2-e/yr	146,000	146,000	68,000
Compressor Turbines	t CO_2-e/yr	-	97,000	286,000
Gas Turbine Generators	t CO_2-e/yr	52,000	52,000	52,000
Other emissions	t CO_2-e/yr	6,000	6,000	6,000
Total	t CO_2-e/yr	**204,000**	**301,000**	**412,000**

Timing for the early and full compression stages has been estimated based on contemporary data, however is dependent upon reservoir performance hence subject to change.

7.2.3.5 Indirect emissions

To determine the relevance of indirect emissions to the activities under this EP, CAPL undertook an assessment against the factors for determining what is an indirect consequence, in accordance with the *'Indirect consequences' of an action: Section 527E of the EPBC Act* Policy Statement. As an outcome of this assessment, the following activities have been identified as indirect emission sources for planned activities under this EP:

- gas processing at the onshore facilities at Ashburton North[20]
- transport and third party end-use of LNG, condensate and domestic gas products.

As the Wheatstone Project supplies both the Australian domestic and the international energy market, these transport and third-party end-use indirect emissions may occur across multiple global regions. A large percentage of LNG produced by the Wheatstone Project is supplied internationally under long-term contracts. This long-term export market is primarily Japan, with some exports to other countries including the Republic of Korea (South Korea). These indirect emissions would be direct emissions for the end consumers and would also have to operate under other regulatory regimes, Australian, Japanese, and South Korean, to manage their emissions and any associated impacts.

Japan is a party to, and has ratified, the Paris Agreement. Japan has submitted an NDC to reduce its GHG emissions by 60% in fiscal year 2035, and by 73% in fiscal year 2040 from its fiscal year 2013 levels (Ref. 316). Japan's NDC submission stated that these targets "are on a straight pathway towards the achievement of net-zero by 2050" (Ref. 316). Japan's long-term strategy includes driving decarbonisation of the energy and transport sectors (Ref. 315). The strategy promotes the shift to decarbonised power sources (which includes using existing gas infrastructure [e.g. gas turbines] where relevant) and the development of "greener ships such as gas-fueled ships powered by LNG, hydrogen, ammonia and others" (Ref. 315).

The Republic of Korea is a party to, and has ratified, the Paris Agreement. In December 2021, the Republic of Korea submitted an updated NDC raising its emission reduction targets from 26.3% of 2018 levels to 40% from 2018 levels by 2030 (Ref. 461). South Korea's implementation plan includes to "dramatically phase

[20] The "gas processing at the onshore facilities at Ashburton North" incorporates several emission sources, including gas turbine drivers, gas turbine generators, heating, flaring, venting, diesel consumption, marine tugs, and fugitive emissions.

down coal-fired power generation", shut down aged coal power plants or shift their fuels from coal to LNG, and focusing emission reduction efforts within the shipping sector on "distributing eco-friendly ships" (Ref. 461).

Based on the boundary and inventory described above, an estimate of annual indirect GHG emissions related to activities under this EP are shown in Table 7-5. For the purposes of the risk assessment in Section 7.2.3.7, CAPL have evaluated a capacity adjusted onshore operations emissions estimate from the primary approval of 4.2 Mtpa CO_2-e (Ref. 57; Section 7.2.3.6).

Planned activities under this EP are not expected to significantly vary, such that it would result in a significant change to the estimated annual indirect emissions over the next five-year in-force period of this EP. The Wheatstone Project has approval to operate until 2060 (Section 7.2.3.6).

Table 7-5: Estimated indirect emissions associated with activities under this EP

Source	Annual estimated emissions ($MtCO_2e$)
Gas processing at the onshore facilities at Ashburton North[1]	4.2
Transport and third-party end use of products[2,3,4]	36.8

1. Source EIS/ERMP (Ref. 57) for onshore facilities at Ashburton North operating at full 25 Mtpa capacity, capacity adjusted on forecast LNG production within the five-year in-force period of the EP.
2. Transport emissions estimated from shipping fuel consumption scaled for a representative year of production. Emissions factors sourced from IMO Resolution Marine Environment Protection Committee (MEPC).245(66) (Ref. 277) and IPCC AR5 100-year global warming potentials (Ref. *282*).
3. Emissions from third-party use of products calculated in alignment with methods in Category 11 of IPIECA's Estimating Petroleum Industry Value Chain (Scope 3) Greenhouse Gas Emissions (Ref. 286), including product quantity and fuel specific higher heating values, and the CO2, CH4 and N2O combustion emissions factors for each fuel type. Evaluation based upon production data from a representative year, applying API compendium methodologies (Ref. 21) and factors, and IPCC AR5 100-year GWP (Ref. *282*).
4. Estimated transport and third-party end use of products is consistent with the Wheatstone LNG Plant Greenhouse Gas Management Plan (GHGMP) (Ref. 86).

7.2.3.6 Primary approvals

The Wheatstone Project was assessed through an Environmental Impact Statement / Environmental Review and Management Program assessment process under the WA EP Act and the Commonwealth EPBC Act.

The Wheatstone Project was approved by the WA Minister for Environment on 30 August 2011 by way of Ministerial Statement (MS) 873, and as amended by MS 903, MS 922, MS 931, MS1130, MS1201 and Attachments 1 to 4.

The then Commonwealth Minister for Sustainability, Environment, Water, Population and Communities approved the Wheatstone Project on 22 September 2011 (EPBC 2008/4469), with variations to EPBC 2008/4469 Conditions 2, 3, 5, 6, 8, 44, 45, 47, 54, 55, 56, 58, 66e, 71, 71A, and 71B made pursuant to section 143 of the EPBC Act. The approval has effect until 31 December 2060.

Chapter 3 and Chapter 4 of the *Draft Environmental Impact Statement / Environmental Review and Management Proposed Wheatstone Project* (Ref. 57) set out the environmental impact assessment of GHG emissions. In that assessment it was estimated that the long-term average annual emissions for the Wheatstone Project were approximately 0.45 Mtpa of GHG for the offshore

component[21] (including the platform), and 9.9 Mtpa for the onshore component[22] (Ref. 57).

Greenhouse gas management plan

The Wheatstone LNG Plant GHGMP (Ref. 86) was developed to satisfy the requirements of condition 19 of MS 873 (as amended by MS 1201). The GHGMP is applicable to all Scope 1 GHG emissions from the current operational Wheatstone Project facilities (as outlined in MS 873), including the two LNG processing trains and domestic gas plant, and associated onshore support operations.

The following is an overview of the requirements of condition 19[23]:

- conditions 19.1 and 19.2—sets a requirement to avoid, reduce, and/or offset Reservoir Emissions[24] for each five year period
- conditions 19.3 and 19.4—sets limits for Net GHG Emissions at five-yearly intervals on a trajectory to net zero for FY2051 onwards
- condition 19.5 and 9.10—implement the GHGMP
- conditions 19.6, 19.7, 19.8, 19.9, 9.11, 9.12, 9.13—reporting requirements and revisions to GHGMP
- condition 19.14—requirement to make documents (including the GHGMP, summary plans and all reports) publicly available.

Note: As described in Section 7.2.3.2, the State Government has initiated a review of existing Ministerial Statements under section 46 of the EP Act (WA). At the time of writing this EP, the section 46 process is underway for the Wheatstone Project; however, no changes to existing approval conditions have been finalised or published (i.e. the existing approval conditions, including this GHGMP, remain in place).

7.2.3.7 Risk assessment

Source			
Activities identified as having the potential to result in GHG emissions are: • direct emissions from planned platform activities within scope of this EP • indirect emissions from activities associated with processing of gas at Ashburton North • indirect emissions from the transport and third party end-use of LNG, condensate and domestic gas produced by the Wheatstone Project.			
Potential impacts and risks			
Impacts	**C**	**Risks**	**C**
GHG emissions may result in: • contribution to the reduction of the global atmospheric carbon budget (by	6	A decrease in the global atmospheric carbon budget may result in:	—

[21] The offshore component of the Wheatstone Project incorporates several emission sources including gas compressor turbines, gas power generation turbines, flaring (HP, LP, and pilot), back-up diesel generators, helicopters, and fugitive emissions (Ref. 57).

[22] The onshore component of the Wheatstone Project is equivalent to the "gas processing at the onshore facilities at Ashburton North" component, but at full 25 Mtpa capacity.

[23] The full condition statement from MS 1201 are available online from the EPA's website: https://www.epa.wa.gov.au/sites/default/files/1MINSTAT/1732%20Statement%201201%20for%20publishing%20Wheatstone.pdf

[24] Reservoir Emissions and Net GHG Emissions are defined within MS 873 (as amended by MS 1201).

the amount of the direct and indirect GHG associated with activities under this EP)		• contribution to the anthropogenic influence on the global climate system.	

Consequence evaluation

Contribution to the reduction of the atmospheric carbon budget

Direct GHG emissions from platform activities within scope of this EP are estimated to be ~0.45 Mtpa CO_2-e, and indirect GHG emissions from the processing of gas onshore at Ashburton North are estimated to be ~4.2 Mtpa CO_2-e[25]. Combined these emissions represent ~1.06% of national Australian emissions (when compared to FY2024 inventory of 440.6 Mt CO_2-e) (Ref. 525). The direct (from activities within this EP) and indirect (from gas processing at the onshore facilities at Ashburton North) GHG emissions are within levels previously assessed and approved for the Wheatstone Project pursuant to the EP Act and EPBC Act.

The indirect GHG emissions from the transport and third party end-use of LNG, condensate and domestic gas are estimated to be ~36.8 Mtpa CO_2-e[26,2728].

According to the IPCC, Sixth Assessment Report for Working Group 1 (WG1 AR6), "the total anthropogenic effective radiative forcing (ERF) in 2019, relative to 1750, was 2.72 [1.96 to 3.48] Wm^{-2} (*medium confidence*) and has likely been growing at an increasing rate since the 1970s, [and]…Over 1750–2019, CO_2 increased by 131.6 ± 2.9 ppm (47.3%)."[29]

The IPCC defines the term "carbon budget" as "refer[ing] to the maximum amount of cumulative net global anthropogenic CO_2 emissions that would result in limiting global warming to a given level with a given probability, taking into account the effect of other anthropogenic climate forcers. This is referred to as the total carbon budget when expressed starting from the pre-industrial period, and as the remaining carbon budget when expressed from a recent specified date. Historical cumulative CO_2 emissions determine to a large degree warming to date, while future emissions cause future additional warming. The remaining carbon budget indicates how much CO2 could still be emitted while keeping warming below a specific temperature level."[30]

The remaining carbon budget for a 50% likelihood to limit global warming to 1.5°C, 1.7°C, and 2°C is respectively, 500 Gt CO_2, 850 Gt CO_2, and 1350 Gt CO_2.[31]

If the total direct and indirect GHG emissions are ~41.5 Mtpa CO_2-e, then this contributes ~0.1–0.3% to the reduction in the total remaining global carbon budget, which is a *de minimis* decrease. It is noted that this estimated contribution to the total global carbon budget is based on the emissions estimates (including platform emissions [Section 7.2.3.4], IMR emissions [Section 7.4.5.1], and indirect emissions [Section 7.2.3.5]), operations continuing through to 2060 (i.e. current end of approval life), and with no allowance for future mitigation (including implementation of existing emission reduction requirements for the Wheatstone Project and customer markets, net zero aspirations, future technology or operational efficiencies, or future Australian regulatory or international policy requirements). Emissions from the Wheatstone Project have reduction targets on a trajectory towards net zero by 2050 under both the Commonwealth Safeguard Mechanism and State approval conditions (Sections 7.2.3.2 and 7.2.3.6), and existing customer markets (including Australia for domestic gas) have emissions reductions targets in their respective jurisdictions (Sections 7.2.3.2 and 7.2.3.5).

According to the IEA, natural gas, "which emits less carbon that most other fossil fuels", accounts for about a quarter of global electricity generation (Ref. 527). Further, IEA acknowledge that while natural gas may have a "limited role as a transition fuel from coal to renewable energy sources", it may still be needed as a back-up for variable (e.g. wind, solar) renewable power sources (Ref. 527). A comparison of life-cycle emissions intensities between LNG and coal by IEA indicated

[25] Source: EIS/ERMP (Ref. 57) for onshore facilities at Ashburton North, pro-rated and capacity adjusted.

[26] Transport emissions estimated from shipping fuel consumption scaled for a representative year of production. Emissions factors sourced from IMO Resolution MEPC.245(66) (Ref. 277) and IPCC AR5 100-year global warming potentials (Ref. 282).

[27] Emissions from third-party use of products calculated in alignment with methods in Category 11 of IPIECA's *Estimating Petroleum Industry Value Chain (Scope 3) Greenhouse Gas Emissions* (Ref. 286), including product quantity and fuel specific higher heating values, and the CO_2, CH_4 and N_2O combustion emissions factors for each fuel type. Evaluation based upon production data from a representative year, applying API compendium methodologies (Ref. 21) and factors, and IPCC AR5 100-year IPCC Global Warming Potential (GWP) (Ref. 282).

[28] Source: Wheatstone LNG Plant GHGMP (Ref. 86).

[29] IPCC, AR6, WG1, at TS-35

[30] IPCC, AR6, WG1, at SPM-48 footnote 43

[31] IPCC, AR6, WG1, at SPM-29 Table SPM.2

that LNG resulted in “about 25% fewer emissions than coal across energy use cases of these fuels” (Ref. 526).

Within Australia, the energy market operator considers that gas has a critical role in energy supply and security during the transition to lower carbon energy sources (Ref. 528; Ref. 529); and this is supported by the Australian Governments Future Gas Strategy (Ref. 509). Further, a supply gap in the WA’s domestic gas market is projected to occur from 2030 onwards under all modelled scenarios (Ref. 529). The Wheatstone Project is one of the largest contributors to the domestic gas market in WA, having the second largest indicative domestic gas reservation, and having supplied ~19% of WA’s total domestic gas supply in 2023 and 2024 (Ref. 529).

A benchmarking assessment for the LNG processing emissions was undertaken during the *Draft Environmental Impact Statement/ Environmental Review and Management Proposed Wheatstone Project* (Ref. 57). This benchmarking assessment showed that the Wheatstone Project is within the range of emissions intensities compared to other Australian projects benchmarked (Ref. 57).

Benchmarking was more recently undertaken during the development of the GHGMP (Ref. 86), which estimated a net GHG emissions intensity for the Wheatstone LNG Plant as 0.27 t CO2-e per t LNG. This net emissions intensity was similar to or slightly above three other comparable gas developments (Gorgon, Pluto, NWS Extension) on the North West Shelf (Ref. 86).

The nominal project life of the Wheatstone Project (Section 3.1.2) is also considered to be consistent with the intent of the Australian Government’s Future Gas Strategy in that the use of gas is expected to continue through to 2050 and beyond (Ref. 509).

The World Energy Outlook 2025 (WEO 2025; Ref. 530) presents projections of potential future energy trends based on three different scenarios: Current Policies Scenario (CPS) and Stated Policies Scenario (SPS) which are both exploratory scenarios based on energy-related policies; and the Net Zero Emissions by 2050 Scenario (NZE Scenario), a normative scenario in that it works backwards from a defined outcome . All three scenarios in the WEO 2025 projected that the long-term global mean temperature rises above pre-industrial levels exceeds 1.5°C around 2030 (Ref. 530). Under CPS and STEPS temperatures were projected to continue to rise to close to 2°C around 2050; and then to 2.9°C and 2.5°C by 2100 respectively (Ref. 530). Under the NZE Scenario, temperatures were projected to peak around 1.65°C around 2050, and then decrease back below 1.5°C by 2100 (Ref. 530).

Total global energy demand has continued to increase, and fossil fuels have provided nearly 80% of this demand between 2000 and 2024 (Ref. 530). However, the geographical context of energy demand has varied: advanced economies previously accounting for over half, now account for around one-third of global energy demand; whereas energy demand in emerging market and developing economics has more than doubled since 2000 (Ref. 530). Global energy demand is projected to continue to increase, and natural gas maintains a role (to varying extents) in global energy projections to 2050 under all three WEO 2025 scenarios. Under STEPS, the demand for natural gas is projected to peak around 2035 and then remain around this level through to 2050 (Ref. 530). The demand in advanced economies is projected to decline, while the demand in emerging market and developing economies increases (Ref. 530). The projected demand for natural gas has increased in WEO 2025 compared to the previous WEO 2024 (Ref. 530). The Wheatstone Project is an existing development that has been producing since 2017, supplying both Australian and international markets.

Indirect emissions associated with the transport and third party end-use of LNG, condensate and domestic gas products is the largest category of emissions associated with Chevron’s activities (Ref. 85). These types of indirect emissions are driven by domestic and global demand, which is in turn driven by economics, policy, regulation, and consumer behaviour on a global scale (Ref. 85). As described in Section 7.2.3.5, the countries with major sales agreements in place for products from the Wheatstone Project have submitted NDCs to the UNFCCC in alignment with the Paris Agreement. This includes Australia for the domestic gas component of the Wheatstone Project.

In summary, given that:

- power generation from natural gas emits less carbon compared to other fossil fuel alternatives (e.g. Ref. 527; Ref. 526)
- projections in global and domestic energy trends identify natural gas as an energy source for the foreseeable future (e.g. Ref. 529; Ref. 530)
- natural gas has been recognised by the Australian Government as part of Australia’s long-term energy security and transition plans (Section 7.2.3.1)
- the activities under this EP are associated with an overall *de minimis* contribution to the reduction of the global carbon budget

- Wheatstone Project has GHG emission reduction targets on a trajectory to net zero by 2050 under both Commonwealth Safeguard Mechanism and State approval conditions (Section 7.2.3.2)
- Australia has GHG emission reduction targets that align with intent of the Paris Agreement (Section 7.2.3.2)
- customer countries adopt their own regulatory mechanisms relating to GHG emissions based on various considerations, including energy policies, GHG emissions reduction ambitions, and international commitments

the potential impact of the contribution of GHG emissions from the petroleum activity (and relevant indirect consequences) to the reduction to the global carbon budget has been evaluated as having the potential to result in an Incidental (6) consequence.

Contribution to anthropogenic influence on the global climate system

As a contribution to the anthropogenic influence on the global climate system cannot be directly attributed to any one development, no consequence rating has been applied for this risk, however the following contextual evaluation is provided.

Changes to climate systems

As the Working Group I contribution to the Sixth Assessment Report (WGI AR6) of the Intergovernmental Panel on Climate Change (IPCC) acknowledges, "[c]limate change is a global phenomenon, but manifests differently in different regions" (Ref. 23). Moreover, the Summary for Policymakers to the same report states that "[h]istorical cumulative CO_2 emissions determine to a large degree warming to date, while future emissions cause future additional warming" (Ref. 281). Future emissions are relevant to remaining carbon budgets, which vary based on emissions scenarios, and "indicates how much CO_2 could still be emitted while keeping warming below a specific temperature level" (Ref. 281).

According to the IPCC AR6, the physical risks of climate change are varied and widespread. Chevron Corporation acknowledges that the company's operations are subject to disruption from natural or human causes beyond its control, including physical risks from hurricanes, severe storms, floods, heat waves, other forms of severe weather, wildfires, ambient temperature increases, sea level rise, fires, and earthquakes, some of which may be impacted by climate change and any of which could result in suspension of operations or harm to people or the natural environment (Ref. 531).

According to the IPCC, among other things, global changes to the climate system can include the following: increase in global surface temperatures, changes to frequency and intensity of precipitation, sea level rise, retreat of glaciers and artic sea ice, changes to the intensity and frequency of certain extreme weather events and droughts (Ref. 280). Specifically, the IPCC projections for the Australia include:

- **Droughts:** Additional regional changes in Australasia [. . .] include a significant decrease in April to October rainfall in southwest Western Australia, observed from 1910 to 2019 and attributable to human influence (*high confidence*[32]), which is *very likely* to continue in future. Agricultural and ecological and hydrological droughts have increased over southern Australia (*medium confidence*), and meteorological droughts have decreased over northern and central Australia (*medium confidence*). (. . .) Agricultural and ecological droughts are projected to increase in southern and eastern Australia (*medium confidence*) for a 2°C global warming levels (GWL)."[33]
- **Fire Weather Conditions**: "The number of evident attribution studies on compound events is limited. There is *medium confidence* that weather conditions that promote wildfires have become more probable in southern Europe, northern Eurasia, the USA, and Australia over the last century. In Australia a number of event attribution studies show that there is *medium confidence* of increase in fire weather conditions due to human influence.".[34] (. . .) Fire weather is projected to increase throughout Australia (high confidence) . . . .[35]
- **Precipitation:** "In the future, heavy precipitation and pluvial flooding are *very likely* to increase over northern Australia and central Australia, and they are *likely* to increase

[32] "The following terms have been used to indicate the assessed likelihood of an outcome or a result: virtually certain 99–100% probability, very likely 90–100%, likely 66–100%, about as likely as not 33–66%, unlikely 0–33%, very unlikely 0–10%, exceptionally unlikely 0–1%. Additional terms (extremely likely 95–100%, more likely than not >50–100%, and extremely unlikely 0–5%) may also be used when appropriate." IPCC AR6, SPM-4.

[33] IPCC AR6, WG1, TS-93.

[34] IPCC AR6, WGI, TS-74.

[35] IPCC AR6, WGI, TS-93.

elsewhere in Australasia for GWLs exceeding 2°C and with *medium confidence* for a 2°C GWL."[36]

- **Relative Sea Level Rise: "**Relative sea level has increased over the period 1993–2018 at a rate higher than global mean seal level (GMSL) around Australasia (*high confidence*). Sandy shorelines have retreated around the region, except in southern Australia, where a shoreline progradation rate of 0.1 m yr–1 has been observed."[37] . . . "Relative sea-level rise is virtually certain to continue in the oceans around Australasia, contributing to increased coastal flooding in low-lying areas (*high confidence*) and shoreline retreat along most sandy coasts (*high confidence*)."[38]
- **Snowfall:** "Snowfall is expected to decrease throughout the region at high altitudes in [] Australia (*high confidence*)."[39] (. . .) "Observations in Australia show that the snow season length has decreased by 5% in the last five decades. Furthermore, the date of peak snowfall in Australia has advanced by 11 days over the last 5 decades."[40]
- **Tropical Cyclones:** "In Australia, the number of [tropical cyclones] has generally declined since 1982, and the frequency of intense TCs that make landfall in north eastern Australia has declined significantly since the 19th century (*medium confidence*). There is *high confidence* that cyclones making landfall along north eastern and north Australian coastlines will decrease in number and *low confidence* of an increase I their intensities for a 2°C global warming level as well as for the mid-century period with scenarios RCP4.5 and above, with the amplitude of changes increasing from RCP4.5 to RCP8.5. Decreases in frequency are projected for 'east coast lows.'"[41]

IEA's WEO 2025 (Ref. 530) analysis states that "[t]he long-term global average rise in temperatures above pre-industrial levels was around1.4°C in 2024 and since 1980 has been increasing by around 0.2°C per decade". The World Meteorological Organisation (WMO) reports that global mean near-surface temperature in January–August 2025 was 1.42±0.12°C above the pre-industrial average (Ref. 532). These temperatures have "dropped slightly from the record high for the year 2024, consistent with the shift from El Niño conditions – which boosted global temperatures during 2023 and 2024 – to neutral conditions at the start of 2025" (Ref. 532).

The WMO also reports that "[o]cean heat content in 2024 was the highest on record, exceeding the 2023 value by 16±8 zetajoules (ZJ). Preliminary data from the early months of 2025 indicate that ocean heat content has continued to rise." (Ref. 532).

Australian Values and sensitivities vulnerable to climate change

The Working Group II contributions to the IPCC's Sixth Assessment Report (WGII AR6) provides a summary of the observed impacts, adaptation and vulnerability (Ref. 123). The WGII AR6 report notes that "[c]limate trends and extreme events have combined with exposure and vulnerabilities to cause major impacts for many natural systems, with some experiencing or at risk of irreversible change in Australia (*very high confidence*)"[42] and that "[c]limate trends and extreme events have combined with exposure and vulnerabilities to cause major impacts for some human systems (*high confidence*)"[42]. The WGII AR6 report identifies nine key climate risks for the Australasian region:

- "Loss and degradation of coral reefs and associated biodiversity and ecosystem service values in Australia due to ocean warming and marine heatwaves (*very high confidence*)
- Loss of alpine biodiversity in Australia due to less snow (*high confidence*)
- Transition or collapse of alpine ash, snowgum woodland, pencil pine and northern jarrah forests in southern Australia due to hotter and drier conditions with more fires (*high confidence*)
- Loss of kelp forests in southern Australia and southeast New Zealand due to ocean warming, marine heatwaves and overgrazing by climate-driven range extensions of herbivore fish and urchins (*high confidence*)
- Loss of natural and human systems in low-lying coastal areas due to sea-level rise (*high confidence*)

[36] IPCC AR6, WGI, TS-93.

[37] IPCC AR6, WGI, TS-93.

[38] IPCC AR6, WGI, 12-57.

[39] IPCC AR6, WGI TS-93.

[40] IPCC AR6, WGI, TS-93-94.

[41] IPCC AR6, WGI, 12-54, 55.

[42] IPCC AR6, WGII, Australasia FS (Ref. 283).

- Disruption and decline in agricultural production and increased stress in rural communities in south-western, southern and eastern mainland Australia due to hotter and drier conditions (*high confidence*)
- Increase in heat-related mortality and morbidity for people and wildlife in Australia due to heatwaves (*high confidence*)
- Cascading, compounding and aggregate impacts on cities, settlements, infrastructure, supply-chains and services due to wildfires, floods, droughts, heatwaves, storms and sea-level rise (*high confidence*)
- Inability of institutions and governance systems to manage climate risks (*high confidence*)."[42]

A report by Australia's Biodiversity and Climate Change Advisory Group (Ref. 486) indicates that "[b]iodiversity is one of the most vulnerable sectors to climate change". The report also notes that "Australia's biodiversity is not distributed evenly over the continent but is clustered in a small number of hotspots with exceptionally rich biodiversity", and that these "include the Great Barrier Reef, south-west Western Australia, the Australian Alps, the Queensland Wet Tropics and the Kakadu wetlands" (Ref. 486). The report identifies "a few examples of recently observed changes in Australia's biota that are consistent with the emerging climate change 'signal' ", as genetic constitution, geographic ranges, life cycles, populations, ecotonal boundaries, ecosystems, and disturbance regimes (Table 1 within Ref. 486). Further, it is noted that "many of the most important impacts of climate change on biodiversity will be the indirect ones at the community and ecosystem levels, together with the interactive effects with existing stressors (Ref. 486).

DAWE have identified climate change as a key threat, specifically that "[a] changing climate is impacting our threatened animals, plants and environments. It is reducing the number of animals and plants, and reducing the places where they occur" (Ref. 157). DAWE also note that "[t]he changing climate is driving changes in species distribution and the composition and functioning of ecological communities, exacerbating the impacts of other pressures such as habitat fragmentation and invasive species" (Ref. 157).

Climate change is identified as a threat to some protected species, including marine turtles and whales. The *Recovery Plan for Marine Turtles in Australia* states that "[c]limate change is of particular concern to marine turtles because it is likely to have impacts across their entire range and at all life stages. Climate change is expected to cause changes in dispersal patterns, food webs, species range, primary sex ratios, habitat availability, reproductive success and survivorship" (Ref. 129). The *Conservation Management Plan for the Blue Whale* states: [c]limate change is expected to cause changes in migratory timing and destinations, population range, breeding schedule, reproductive success and survival of baleen whales, including blue whale species and subspecies" (Ref. 200).

The *North-west Marine Parks Network Management Plan 2018* identifies climate change as a pressure that may impact marine park values (Ref. 188). The management plan states that "[t]he impacts of climate change on the marine environment are complex and may include changes in sea temperature, sea level, ocean acidification, sea currents, increased storm frequency and intensity, species range extensions or local extinctions, all of which have the potential to impact on marine park values" (Ref. 188).

Anthropogenic influence on the climate system

Anthropogenic changes to the global climate system cannot be directly attributed to any one development or emission source or product, as they are the result of the net accumulation of global GHGs (emissions minus sinks) in the atmosphere since the industrial revolution.

Growing populations, rising incomes, and urbanisation are the principal forces behind energy-demand growth, as they typically lead to greater use of transportation, heating, cooling, lighting, and refrigeration (Ref. 85).

The changing regulatory and international initiatives on climate change (e.g. which may result in changing reduction targets and timeframes) will also influence the total global GHG emissions into the future – making a future prediction of changes to climate systems, inaccurate.

ALARP decision context justification

Offshore platform operations are common both nationally and internationally. The control measures to manage the impacts and risks associated with Scope 1 and Scope 2 GHG emissions are defined via legislative requirements that are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

Currently, under international climate treaties (the Paris Agreement), and national legislated targets (under the *Climate Change Act* [Cth]), Australia has the following target to reduce GHG emissions: 43% below 2005 levels by 2030. This reduction target is both a single-year 'point' target and a multi-year 'emissions budget' target. In September 2025 Australia submitted its

second NDC committing to a "[r]eduction in net national greenhouse gas emissions of 62–70% below 2005 levels by 2035, implemented as an emissions budget covering the period 2031–35" (Ref. 519). The *Climate Change Act* (Cth) also includes a legislated target to reduce Australia's net GHG emissions to zero by 2050.

GHG emissions occurring within Australia (i.e. including those from the petroleum activity, gas processing, and third-party end use of domestic gas) are managed under Australian regulatory mechanisms. The Wheatstone Project is subject to requirements established under the Commonwealth Safeguard Mechanism and WA EP Act approvals (Sections 7.2.3.2 and 7.2.3.6). There are GHG emission reduction requirements under both these regulatory mechanisms on a trajectory to net zero in 2050.

These regulatory requirements are incorporated into control measures below. Given there is sufficient regulatory mechanisms to monitor, mitigate and report on GHG emissions associated with the Wheatstone Project (to which the petroleum activity within scope of this EP is just a component of), there is no uncertainty regarding the appropriateness of emissions reporting and management.

CAPL is committed to conducting activities in an environmentally responsible manner and aims to implement best practice environmental management as part of a program of continuous improvement. This commitment to continuous improvement means that CAPL reviews the GHGMP and other control measures periodically and considers measures to avoid, reduce and offset emissions, including advances in technology and/or operational processes, and considers adoption of those technologies that offer a practicable way of reducing GHG emissions per tonne of LNG. Reviews also address matters such as the overall design and effectiveness of the GHGMP, progress in environmental performance, changes in business conditions, and any relevant emerging environmental issues.

Given the GHG emissions associated with the petroleum activity (and relevant indirect consequences) detailed in this EP result in a *de minimis* contribution to the reduction of the global carbon budget, CAPL considers this aspect to comprise a lower-order impact (Table 5-3). As such, CAPL applied ALARP Decision Context A for this aspect. Notwithstanding this, CAPL has considered additional mitigation measures that could potentially lower the contribution to the reduction of the global carbon budget associated with the direct and indirect emissions arising from the activities covered in this EP.

Good practice control measures and source

Control measure	Source
EP Act approval	The Wheatstone Project was approved by the WA Minister for Environment on 30 August 2011 by way of MS 873 (and as amended; refer to Section 7.2.3.6). Condition 19 of MS 873 (as amended by MS 1201)requires the development and implementation of a GHGMP. The requirements of the Wheatstone LNG Plant GHGMP are described in Section 7.2.3.6. Under condition 19 CAPL must take measures to ensure that Net GHG Emissions do not exceed: • 14.95 Mt CO2-e per financial year until FY2025 • 14.55 Mt CO2-e per financial year for the period between FY2026 and FY2030 • 12.75 Mt CO2-e per financial year for the period between FY2031 and FY2035 • subsequent five-yearly reductions towards a net zero from FY2051 onwards. As acknowledged in Section 7.2.3.2, at the time of writing this EP, a section 46 process is underway for the Wheatstone Project. However, no changes to existing approval implementation conditions have been finalised or published, and as such, the existing conditions (i.e. including those related to the GHGMP) remain in place. CAPL will comply with all requirements for the management and reduction of GHG emissions that are in-force at any given time.
EPBC Act approval	The Wheatstone Project was approved by the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities on

	22 September 2011 by way of EPBC 2008/4469 (and as amended; refer to Section 7.2.3.6).
National Greenhouse and Energy Reporting scheme	The Wheatstone Operations Facility is required to report GHG emissions under NGER and Safeguard Mechanism schemes. From July 2016 emissions have been subject to a baseline in accordance with the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015. Under the 2023 Safeguard Mechanism reforms a facility's baseline will decline by 4.9% each financial year from FY2024 through to FY2030. The subsequent baseline decline rates will be set in 5-year blocks consistent with updates to Australia's NDC under the Paris Agreement. The Safeguard Mechanism production-adjusted baseline for the Wheatstone Operations Facility for FY2024 was 4.07 Mt CO_2-e (inclusive of the 4.9% decline). All Safeguard facilities' net emissions must be at or below baselines by the annual deadline. Responsible emitters of facilities that exceed or expect to exceed their baselines must manage their excess emissions (e.g. by surrendering offset credits). CAPL will comply with all NGER and Safeguard Mechanism requirements for the management and reduction of GHG emissions that are in-force at any given time.
Energy efficient design	During the design phase for the Wheatstone Project, energy efficient design features were incorporated to minimise power demand and in turn air emissions. Specifically, some of the equipment installed included the waste heat recovery units (WHRUs), high integrity valves and flanges, seawater heat exchange and lift pump configuration, aero derivative turbines, variable compression modes, condensate export pumps with variable speed drive.
CMMS	To ensure that all energy efficient features are operating appropriately, preventative maintenance regimes have been developed and incorporated into the CMMS. Maintenance activities are managed through CMMS which is used as the main asset and inventory management system within CAPL for performing and tracking maintenance activities.
Air emissions monitoring	The *Platform Air Emissions Monitoring Program (*Section 9.4.1.2) is designed to meet emissions reporting requirements. Gas compressor turbines, power generation turbines, diesel system, LP flared gas and HP flared gas, and pilot gas and purge gas are monitored to inform emissions reporting and management.
Platform emissions management	An *Emissions and Energy Management Plan* (EEMP) (Ref. 117) for the Wheatstone Platform accounts for all key GHG emission sources on the Platform, and describes the process for emissions allocation and reporting, emissions tracking and deviation management, and links to management of change processes and revision triggers to ensure that emissions are managed to ALARP. It includes an emissions management section involving setting of performance standards/targets for platform emissions and regular monitoring of performance against these standards to ensure that emissions are minimised as far as reasonably practicable. As part of emissions management, a leak detection and repair (LDAR) program is in place for the Wheatstone Platform. The LDAR program is implemented to detect fugitive emissions, and address the subsequent management or repair of sources of fugitive emissions.
Corporate governance	Chevron Corporation has set an aspirational target of net zero upstream Scope 1 and Scope 2 emissions by 2050, as well as 2028 reduction targets for two enterprise-level metrics: portfolio carbon intensity (PCI) and upstream carbon intensity (UCI) (Ref. 85, Ref. 531). The PCI metric developed by Chevron Corporation represents "the carbon intensity across the full value chain associated with bringing products to market, including Scope 3 emissions"[44](Ref. 85). It uses a representative

[44] Quote CCR (October 2021), at pg 38.

	value chain that includes emissions associated with bringing products to market, and emissions from their use. The Chevron Corporation PCI reduction target for 2028 (i.e. >5% reduction from 2016) are corporate level targets incorporating emissions from all Chevron operated assets and non-operated joint ventures. Within CAPL operational control, Scope 1 emissions[45], and Wheatstone gas and liquids production data (used to calculate estimated Scope 3 emissions) are compiled, assured, and reported by CAPL to Chevron Corporation annually for inclusion in the PCI metric on an equity basis. Management strategies, projects or improvements that serve to reduce Wheatstone emissions per unit production will contribute to the overall PCI metric. The UCI metric developed by Chevron Corporation are equity-based "emission intensity metrics for oil production, gas production, flaring, and methane" (Ref. 85). The Chevron Corporation UCI reduction targets for 2028 (i.e. 24 kg CO_2-e/boe [26% reduction from 2016] for gas production, 2 kg CO_2-e/boe [53% reduction from 2016] for methane, and 3 kg CO_2-e/boe for overall flaring [66% reduction from 2016]) are corporate level targets incorporating emissions from all Chevron operated assets and non-operated joint ventures. UCI includes Scope 1 and Scope 2 emissions. Within CAPL operational control, Wheatstone gas and liquids production, and Scope 1 emissions data[43], are compiled, assured, and reported by CAPL to Chevron Corporation annually for inclusion in the UCI metric, which is depicted on an equity basis. Management strategies, projects, or improvements that serve to reduce Wheatstone emissions per unit production will contribute to the overall UCI metric. The PCI and UCI metric are described and publicly reported within the *Corporate Sustainability Report* (e.g. Ref. 84, Ref. 93) and *Climate Change Resilience* (e.g. Ref. 85, Ref. 531). As identified in Table 2-6, Chevron Corporation is a corporate member of IPIECA (Table 2-6) and via that membership worked on the SDG Roadmap (Ref. 288). The *2021 Corporate Sustainability Report* describes Chevron's contributions to the impact opportunities identified within the Roadmap (Ref. 93). Chevron Corporation is a signatory to the *Methane Guiding Principles* (Table 2-6), and publicly reports on activity against each of the principles (Ref. 98). Chevron Corporation is also a signatory to the Aiming for Zero Methane Emissions Initiative (Table 2-6), and as a signatory will annually report on methane emissions. Management strategies, projects, or improvements for the Wheatstone Project, including those related to initiatives or commitments made by Chevron Corporation, may be identified and implemented via the 'emissions reduction review' process or adaptive management processes ('address uncertainty' and 'methane management) control measures.
Emissions reduction review	As a global company, Chevron operates in many jurisdictions that have enacted lower-carbon policies. CAPL regularly evaluates carbon emission reduction projects for opportunities to avoid, eliminate, or reduce emissions. Continual improvement processes, including but not limited to marginal abatement cost curve (MACC) evaluations, allow CAPL to rank emission reduction opportunities by their relative cost and abatement potentials. Given the sheer scale of the global challenge to address the global carbon budget, allocation of limited resources as efficiently and effectively as possible is critical to creating the greatest opportunity for success. Prioritizing efforts that curtail emissions at the lowest cost per tonne, irrespective of where or in which sectors those abatements occur, is the most economically efficient approach. The enterprise approach to drive emissions reductions in Chevron's portfolio is the marginal abatement cost curve (MACC) process. Like supply stacks, MACCs can enable a visualization of abatement opportunities, showing their relative cost and abatement potential on a similar basis. The relevant stages in the MACC process are:

[45] There are currently no Scope 2 emissions associated with the Wheatstone LNG Plant (Ref. 86).

	• opportunity identification by CAPL cross-functional team (with input from all Wheatstone Joint Venture participants) • opportunity development and submission by CAPL • enterprise-wide portfolio optimisation / selection for funding • implementation and reporting by CAPL • project tracking and knowledge sharing to ensure constant learning and continuous improvement. The process is ongoing with MACC project selection for funding occurring annually. The scope of the MACC process is activities within CAPL operational control (e.g. with respect to Wheatstone Operations, this includes the onshore facilities at Ashburton North). CAPL provide input on appropriate assumptions for decision analysis, upon which the US-based Carbon Reduction team apply both deterministic and probabilistic analysis to assess emissions reduction opportunities, consistent with Chevron Decision Analysis practices. The US-based Carbon Reduction team use portfolio theory and efficient frontier analysis to identify a portfolio of opportunities to progress across the technology spectrum, segments, business units, and geographies.
Legislative and other requirements review	CAPL is committed to continual improvement and adaptive management processes, and regularly monitors for revised or contemporary Australian regulatory and/or relevant international guidelines or standards in relation to GHG (including methane) and carbon management. With specific reference to international shipping, CAPL is aware that the IMO is continually updating their mandatory measures to reduce emissions from international shipping (e.g. the 2023 IMO GHG Strategy; Ref. 533). The commercial arrangements governing all export shipping engaged in loading cargoes from the Wheatstone Marine Terminal, requires CAPL and their joint venture partners to procure ships that comply with international and Australian standards, so to the extent that a ship's Flag State, or AMSA as Port State, adopts IMO resolutions for measures to reduce emissions, these will apply to those third-party vessels (as well as Chevron Shipping vessels). Emissions from third party ships are not within the control of CAPL but have been included for completeness.
Address uncertainty	CAPL acknowledges the residual uncertainty associated with evaluation of environmental impacts and risks from the generation of GHG emissions. Uncertainty arises from advancements in climate science, revised forecasts in global energy mix, and subsequent changes in regulatory and policy requirements. These areas will evolve and new information will become available over the in-force period of this EP. As such, CAPL is committed to implementing an adaptive management process to ensure that impacts and risks associated with this aspect are continually reduced to ALARP and managed to acceptable levels. To address the residual uncertainty associated with impacts and risks from the generation of GHG emissions, the following adaptive management process will be implemented: • Monitor: – contemporary climate science in relation to Chevron Corporate climate risk management (as sourced from the periodic release of Chevron's *Climate Change Resilience* report; Section 9.5) – historical and forecast global energy mix and associated emissions, including the role of Wheatstone product types – revised or contemporary Australian regulatory and/or relevant international guidelines or standards (as per 'legislative and other requirements review' control measure) • Evaluate: – review the accuracy of, and validate, the estimated downstream indirect GHG emissions associated with the Wheatstone Project

	– review and validate the environmental impact and risk assessment for GHG emissions to ensure that GHG emissions are being reduced to ALARP and managed to an acceptable level • Adjust and implement: – identify improvements (e.g. to emission estimates, consequence evaluation, control measures, determination of acceptability, etc.) and implement changes as required. CAPL will implement this adaptive management process annually during the in-force period of this EP. The results of the annual monitoring and evaluation will be documented internally by CAPL. Where this annual review identifies improvements, any changes to the EP will be managed as per the MoC (Section 9.3.2.2) and Environment Plan review (Section 9.5) processes.
Emissions management opportunities	Chevron Corporation continues to take actions to help lower the carbon intensity of our operations while continuing to meet the world's demand for energy (Ref. 531).Chevron Corporation believes climate policy should be designed in a manner that enables the realisation of a lower carbon future at the least cost to society; and that a balanced approach to policy focused on affordability, reliability and environmental protection is needed to meet growing energy demand. CAPL monitors new and evolving opportunities to work with business partners to seek to advance its ambition of managing emissions, including through industry partnerships, research agreements, and commercial opportunities for business diversification into lower carbon energy solutions and/or complimentary technologies for improved efficiency. This is an ongoing process, with opportunities identified, assessed, and implemented on an ad-hoc basis. With any significant technology development, these opportunities may develop over a medium to long term timeframe (i.e. greater than the 5-year in-force periods of EPs).
Methane management	CAPL is committed to implementing an adaptive management process to ensure that methane emissions for the Wheatstone Project are appropriately identified, evaluated, and managed to ALARP in alignment with Chevron Corporation strategies and adopted international guidelines. At a facility level, the following adaptive management process will be implemented by CAPL: • Monitor: – quantification and reporting of methane emissions in accordance with NGER requirements (as part of the 'National Greenhouse and Energy Reporting scheme' control measure) – methane emissions (as part of the Scope 1 and Scope 2 emissions data) are compiled, assured, and reported by CAPL to Chevron Corporate annually for inclusion in the upstream methane intensity metric, which is depicted on an equity basis – regular monitoring program for the detection of fugitive emissions (as per the 'platform emissions management' control measure) – revised or contemporary Australian regulatory and/or relevant international guidelines or standards (as per 'legislative and other requirements review' control measure) • Evaluate: – review the accuracy of the reported methane emissions associated with the Wheatstone Project – review of methane monitoring and mitigation technologies and approaches – opportunities to work with business partners to seek to advance emissions management (as per 'emissions management opportunities' control measure) • Adjust and implement:

	– Identify and evaluate potential management strategies, projects, or improvements for methane emissions management aligned with Chevron Corporation strategies and adopted international guidelines, and implement changes as required. CAPL will implement this adaptive management process annually during the in-force period of this EP. The results of the annual monitoring and evaluation will be documented internally by CAPL. Where this annual review identifies improvements, any changes to the EP will be managed as per the MoC (Section 9.3.2.2) and Environment Plan review (Section 9.5) processes.

Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
(Avoid) Use renewable electricity to power the platform	If a renewable energy source (e.g. solar) was available, then the associated emissions from power generation from the gas turbines would be avoided. However, there is a limited space available for use on the platform, and the construction of any renewable energy source and supply from an alternate land source would require additional disturbances due to land clearing, and offshore cabling and bring in new environmental impacts.	The cost of implementing this control is currently considered grossly disproportionate to the level of risk reduction achieved. Consequently, the practicability of using renewable energy sources to avoided platform electricity emissions for the activities covered in this EP is not considered practicable.
(Avoid) Use renewable electricity to power the hydrocarbon system and Wheatstone LNG and Domgas Plants at Ashburton North	If a renewable energy source (e.g. solar) was available then the associated emissions from power generation from the gas turbines would be avoided. However, there are limitations for use of renewables associated with intermittency and the ability to store a large quantity of power, as well as a limited Development Envelope allowed for use at Ashburton North. The construction of any renewable energy source and supply would require an increase to the land disturbance allowed under existing environmental approvals and bring in new environmental impacts.	The cost of implementing this control is currently considered grossly disproportionate to the level of risk reduction achieved. Consequently, the practicability of using renewable energy sources to avoid emissions for the activities covered in this EP is not considered practicable.
(Reduce) Use of renewable electricity to reduce gas turbine power generation requirements	If a renewable energy source (either with or without battery storage) was available to supply some of the power requirements to the Wheatstone Platform and/or at the Wheatstone LNG and Domgas Plants at Ashburton North, then the associated emissions from power generation from gas turbines could be reduced. Acknowledging the limited space available either on the platform or within the existing Development Envelope at Ashburton North, and that the construction of any renewable energy source, storage, and supply would require an increase to the land disturbance allowed under existing	The use of renewable energy sources to reduce power generation emissions at the platform or Ashburton North is not available for implementation at this time. However, Chevron are currently investigating the feasibility of renewable energy power projects that would allow a reduction in use of the existing gas turbine generators. As such, this cost-benefit analysis will be regularly re-assessed.

	environmental approvals and bring in new environmental impacts, the application of renewable power technology is considered for operating assets where appropriate.	
(Avoid) Eliminate HP flaring	The HP flare is used for upset, relief, and blowdown loads, and is therefore considered a safety critical element for platform operations. At the current time, there is no reasonably practicable alternative to the use of the HP flare from a safety and integrity perspective. However, even if it were possible, this action would not be expected to result in a material reduction of impacts associated with GHG emissions.	The potential production and safety costs are disproportionate to the environmental benefit of avoiding flaring emissions, and is therefore not a reasonably practicable alternative.
(Avoid) Eliminate LP flaring	The LP flare is used on a continuous basis for waste gas streams. Alternative off-gas recovery systems to eliminate LP flaring were considered during FEED. However, for the alternative designs involving off-gas recovery, the environmental benefit gained from a reduction in LP flaring emissions would be counteracted by increased power generation emissions associated with running the gas recovery compressors such that overall net benefit would be reduced. Additionally, increased safety risks are associated with potential leak sources and potential exposure of the waste gas stream to personnel. Therefore, the use of an off-gas system is not considered to be a practicable alternative. The environmental benefit of a reduction in LP flaring would have negligible effects on GHG emissions.	The potential production and safety costs are disproportionate to the environmental benefit of avoiding flaring emissions, and is therefore not a reasonably practicable alternative.
(Reduce) Reduce LP flaring	The LP flare is used on a continuous basis for waste gas streams. Where feasible to retrofit, alternate process technology that serves to reduce or eliminate particular waste gas streams would subsequently reduce the total volume of LP flaring and associated GHG emissions.	There are technical constraints such that the cost of implementing existing alternative process technology is currently considered disproportionate to the level of risk reduction achieved, and as such has not been selected for implementation at this time. However, CAPL regularly evaluates carbon emission reduction projects, including those associated with alternative process technology for waste gas streams at the platform. These projects are incorporated into regular emission reduction reviews (refer to control measure description above), and where selected for implementation during an enterprise-wide selection process. As such, this cost-benefit

		analysis will be regularly re-assessed.
Likelihood and risk level summary		
Likelihood	N/A	
Risk level	N/A	
Determination of acceptability		
Principles of ESD	The impact associated with this aspect is a *de minimis* contribution to the reduction of the global carbon budget. The consequence associated with this aspect was evaluated as Incidental (6). One of the UN 2030 Agenda sustainable development goals (SDGs) is "ensure access to affordable, reliable, sustainable and modern energy for all". Chevron is "inspired" by the UN SDGs and "seek[s] to achieve a more sustainable future" through its business operations (Ref. 84). The principle of inter-generational equity is considered to be met for the Wheatstone Project. Energy is fundamental to society, and access to reliable and affordable energy sources is interlinked with their ability to sustainably develop and maintain health, diversity, and productivity for future generations (Ref. 294). Natural gas provides both a reliable and affordable energy source and is one of the lower emission fossil fuels. The continued use of natural gas is in line with Australia's *Long-Term Emissions Reduction* Plan (Ref. 154), the natural gas from the Wheatstone Project is produced with a lower emissions intensity than other gas supplies on the North West Shelf, and the use of natural gas is considered to support the global transition to lower carbon intensive fuels. In addition, as described in Section 7.2.3.6, the current sales markets for the Wheatstone Project are countries that have also ratified the Paris Agreement and established their own NDCs for managing emissions. The Parties to the Paris Agreement acknowledge that climate change is a common concern of humankind and the Parties should consider their respective obligations, including intergenerational equity. Article 2 of the Paris Agreement states that it "aims to strengthen the global response to the threat of climate change, in the context of sustainable development and the efforts to eradicate poverty, including by" … "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." (Article 2; Ref. 517). Consequently, the principle of intergenerational equity is considered to be met because the Wheatstone Project is consistent with regulated GHG emissions management in Australia and therefore Australia's efforts to meet their Pari Agreement obligations, and similarly international customer markets have Paris Agreement obligations to meet within their respective jurisdictions. The control measures identified and described above are considered to reduce this impact to ALARP. In particular, that GHG emissions from the Wheatstone Project will be managed to within a long-term average annual emissions estimate of ~4.65 Mtpa CO_2-e (Sections 7.2.3.4, 7.3.1.2, 7.3.2.3 and 7.4.5.1), and also adaptively managed via the GHGMP (Ref. 86), the Wheatstone Platform Flare Minimisation and Optimisation Plan (Ref. 117), and EP review process (Section 9.5), demonstrates CAPL's commitment to GHG management. Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered relevant to this aspect include: • *Environment Protection and Biodiversity Conservation Act 1999* (Cth) • *Environmental Protection Act 1986* (WA) • NGER Act • National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Cth)	

	• Conservation Management Plan for the Blue Whale 2015–2025 (Ref. 200) • *Conservation Advice Balaenoptera borealis Sei Whale* (Ref. 452) • *Conservation Advice Balaenoptera physalus Fin Whale* (Ref. 453) • *National Recovery Plan for the Southern Right Whale* (Ref. 150) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *Recovery Plan for the White Shark (Carcharodon carcharias)* (Ref. 219) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129). • *Approved Conservation Advice for Dermochelys coriacea (Leatherback Turtle)* (Ref. 183) • *Wildlife Conservation Plan for Seabirds* (Ref. 139) • *Wildlife Conservation Plan for Migratory Shorebirds* (Ref. 201).
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • *Climate Change Resilience* (Ref. 85) • *Wheatstone Platform Emissions and Energy Management Plan* (Ref. 117) • *Wheatstone LNG Plant: Greenhouse Gas Management Plan* (Ref. 86).
External context	During stakeholder consultation, claims were received regarding GHG emissions and climate change. These claims have been addressed in the consequence evaluation above in conjunction with the controls in place to ensure that the impacts are managed to ALARP and acceptable levels. GHG emissions and climate change are a global phenomenon, with certain segments of society expressing heightened concern. Refer to the consequence evaluation for further detail on CAPL's assessment.
Defined acceptable level	Climate change is listed as a threat to protected matters under documents made or implemented under the EPBC Act. As a reduction in the global carbon budget may result in changes to global climate systems, CAPL has defined an acceptable level of impact such that it is not inconsistent with these documents. Specifically, the following action is defined within the *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 200) and the *Recovery Plan for Marine Turtles in Australia* (Ref. 129): • continue to meet Australia's international commitments to reduce GHG emissions As both of these species have the potential to be directly impacted by other environmental aspects arising from the activities detailed within this EP, CAPL has defined an acceptable level of impact as not materially or substantially contributing to Australia's GHG emissions, and as such, subsequently not preventing Australia meeting international GHG emission commitments. Australia is a signatory to the Paris Agreement and is currently committed to reducing GHG emissions by 43% below 2005 levels by 2030 and 62–70% below 2005 levels by 2035. Article 2 of the Paris Agreement states that it "aims to strengthen the global response to the threat of climate change, in the context of sustainable development and the efforts to eradicate poverty, including by" … "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." (Article 2; Ref. 517). Australia's *Future Gas Strategy* (Ref. 509) "establishes the role gas will play in the transition to net zero by 2050, securing affordable gas for Australia as we [Australia] move to a more renewable grid, and confirming our [Australia's] commitment to being a reliable trading partner" (Ref. 510). The strategy identifies that Australia will need gas through to 2050 and beyond; noting

	that the role of gas will change, and gas-related emissions must decline, as Australia transitions to net zero (Ref. 509). The Australian Government has also developed a *Net Zero Plan*, which sets out a pathway and actions to Australia's 2035 emissions reduction target and to net zero GHG emissions by 2050 (Ref. 535). Moreover, Australia has already reduced emissions by 25.9% in FY2023 compared to FY2005 (Ref. 520). By providing lower emission intensity energy exports (LNG) compared to other fossil fuels, and by not materially or substantially contributing to Australia's GHG emissions, the Wheatstone Project is not inconsistent with Australia's global efforts to reach net zero by 2050. If Australia achieves its efforts to meet net zero by 2050, then it will contribute to global efforts to keep warming to the Paris Agreement target of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels". As discussed within the above consequence evaluation, based on the predicted emissions, the Wheatstone Project has a *de minimis* contribution to the reduction of the global carbon budget. Given that anthropogenic changes to the global climate system cannot be directly attributed to any one development or emission source or product, CAPL considers that the Wheatstone Project will meet the defined "acceptable level of impact as not materially or substantially contributing to Australia's GHG emissions, and as such, subsequently not preventing Australia meeting international GHG emission commitments" by managing their emissions to within a long-term average annual emissions estimate of ~4.65 Mtpa CO_2-e (Sections 7.2.3.4, 7.2.3.5, 7.3.2.3 and 7.4.5.1). Additionally, there are other management plans (i.e. GHGMP [Ref. 86], Wheatstone Platform Flare Minimisation and Optimisation Plan [Ref. 117]), and other regulatory reporting mechanisms (i.e. the National Greenhouse and Energy Reporting scheme) in place to ensure that GHG emissions from the Wheatstone Project are adaptively managed in line with best practice and contemporary legislative and other requirements.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
Do not materially or substantially contribute to Australia not meeting its international GHG emissions commitments by managing direct and indirect GHG emissions associated with the Wheatstone Project in Australia* to within a long-term annual average emissions estimate of 4.65 Mtpa CO_2-e	**EP Act, EPBC Act, NGER and Safeguard Mechanism** CAPL will implement GHG emissions management, reductions, and reporting aligned with applicable requirements under the Commonwealth Safeguard Mechanism as well as approvals under the EP Act (WA) and EPBC Act (Cth), to the extent such requirements remain in-force and as amended from time to time, including: • Net GHG Emissions from the Wheatstone LNG Plant are within the limits set in condition 19.3 of MS 1201 • the Safeguard Mechanism baseline for the Wheatstone Operations Facility declines each financial year at rates as defined within the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015	Records confirm GHG emissions management, reductions, and reporting are aligned with applicable requirements under the Commonwealth Safeguard Mechanism as well as approvals under the EP Act (WA) and EPBC Act (Cth).

	- responsible emitters of facilities that exceed or expect to exceed their baselines must manage their excess emissions through various means including the surrender of ACCUs or SMC Note: The requirements under this control measure may be amended from time to time, and this control measure will be revised to reflect any contemporary requirements.	
	Energy efficient design The energy efficient design features (including the WHRUs, valves and flanges, seawater lift pumps, aero derivative turbines, condensate export pumps) are installed, tested and commissioned according to the relevant Commissioning Test Procedures prior to hydrocarbon production	Records show installation is according to Commissioning Test Procedures
	CMMS The compressors, power generators, flaring system, WHRUs and seawater lift pumps are maintained in accordance with CMMS	CMMS records show maintenance of compressors, power generators, flaring system, WHRUs and seawater lift pumps
	Air emissions monitoring Platform Air Emissions Monitoring Program implemented as per Section 9.4.1.2	Records confirm Air Emissions Monitoring Program is implemented
	Platform emissions management Platform emissions management will be implemented per the Wheatstone Platform EEMP, including monitoring performance against emissions targets, and managing emissions to ALARP	Records confirm the Wheatstone Platform EEMP is implemented
	Emissions reduction review CAPL will implement its emissions reduction review to identify emissions reduction opportunities (within its operational control) for the Wheatstone Project to be included in an enterprise-wide selection process	Records show that annual review of emissions reduction opportunities was performed
	Emissions reduction review CAPL will measure and investigate >5% annual increases to absolute Scope 1 and Scope 2 emissions or intensity	Records show that Wheatstone asset total emissions (t CO_2-e) and upstream intensity (t CO_2-e/t LNG) are measured, root cause of annual increases >5% are investigated, and where practicable, improvement opportunities are evaluated through the MACC process

Corporate governance CAPL will support Chevron Corporation's aspiration of managing global upstream emissions by implementing management strategies, projects, or improvements for the Wheatstone Project selected during an enterprise-wide selection process	Records show that when upstream emissions management strategies, projects, or improvements have been selected for the Wheatstone Project, these are implemented as soon as reasonably practicable (with consideration given to the scope, planned turnaround schedule, and scale of the activity)
Corporate governance CAPL will report Scope 1 and Scope 2 emissions data from the Wheatstone Project to Chevron Corporation annually for inclusion in the calculation of its UCI metric	Records show that annual emissions data from the Wheatstone Project was provided to Chevron Corporation
Corporate governance CAPL will support Chevron Corporate's aspiration of managing global portfolio emissions by implementing management strategies, projects, or improvements for the Wheatstone Project selected during an enterprise-wide selection process	Records show that when portfolio emissions management strategies, projects, or improvements have been selected for the Wheatstone Project, these are implemented as soon as reasonably practicable (with consideration given to the scope, planned turnaround schedule, and scale of the activity)
Corporate governance CAPL will report Scope 1 and Scope 2 emissions data from the Wheatstone Project to Chevron Corporation annually for inclusion in the calculation of its PCI metric	Records show that annual emissions data from the Wheatstone Project was provided to Chevron Corporation
Methane management CAPL will undertake an annual adaptive management process to ensure that methane emissions are identified, evaluated, and managed to ALARP in accordance with Chevron Corporation strategies and adopted international guidelines, specifically including: • quantification and reporting of methane emissions in accordance with NGER requirements • reporting methane emissions data for the Wheatstone platform to Chevron Corporation annually for inclusion in the calculation of its upstream methane intensity metric • review of the accuracy of the reported methane emissions associated with the Wheatstone Platform • review of methane monitoring and mitigation technologies and approaches	Records show that an annual adaptive management process addressing methane management was undertaken

	• identify and evaluate potential management strategies, projects, or improvements for methane emissions management aligned with Chevron Corporation strategies and adopted international guidelines to be incorporated into the emissions reductions review process for the Wheatstone Project	
	Methane management If the above annual monitoring and evaluation identify improvement opportunities to manage methane emissions, then CAPL will implement these changes within this EP in accordance with the MoC (Section 9.3.2.2) and EP Review (Section 9.5) processes	As required, records show that the MoC and/or EP review process were undertaken in response to any improvement opportunities related to the management of methane emissions
Manage downstream indirect GHG emissions^ associated with Wheatstone Project	**Legislative and other requirements reviews** CAPL will undertake annual monitoring of revised or contemporary Australian regulatory requirements, and applicable international guidelines or standards, in relation to carbon management of downstream indirect GHG emissions	Records show that annual monitoring of revised or contemporary Australian regulatory requirements, and applicable international guidelines or standards, in relation to carbon management of downstream indirect GHG emissions was undertaken
	Address uncertainty CAPL will undertake an annual adaptive management process to address the residual uncertainty associated with impacts and risks from the generation of GHG emissions, specifically including: • monitoring the historical and forecast global energy mix and associated emissions, including the role of Wheatstone product types • review of the accuracy of estimated downstream indirect GHG emissions associated with the Wheatstone Project to validate the estimates used as the basis for the impact and risk assessment • review of the environmental impact and risk assessment for GHG emissions to ensure that GHG emissions are being reduced to ALARP and managed to an acceptable level.	Records show that an annual adaptive management process addressing downstream indirect GHG estimates was undertaken
	Address uncertainty If the above annual monitoring and evaluation identify improvement	As required, records show that the MoC and/or EP review process were undertaken in response to any

	opportunities to manage downstream indirect GHG emissions, then CAPL will implement these changes within this EP in accordance with the MoC (Section 9.3.2.2) and EP Review (Section 9.5) processes	improvement opportunities related to the management of downstream indirect GHG emissions
	Emissions management opportunities CAPL will evaluate opportunities to partner with organizations that promote and address GHG emissions reduction and carbon offsets in the LNG value chain, and advocate for LNG and natural gas as fuels of choice	Records show that opportunities to promote and address GHG emissions reduction and carbon offsets in the LNG value chain, and advocating for LNG and natural gas as fuels of choice have been evaluated annually
	Corporate governance CAPL will report production and emissions data from the Wheatstone Project to Chevron Corporation annually for inclusion in the calculation of its PCI metric	Records show that annual production and emissions data from the Wheatstone Project was provided to Chevron Corporation

* Where ‘direct and indirect GHG emissions associated with Wheatstone Project in Australia’ refers to the direct emissions associated with activities within this EP (Sections 7.2.3.4 and 7.4.5.1) plus the indirect emissions from processing gas at the onshore facilities at Ashburton North (Section 7.2.3.6); i.e. emissions within CAPL operational control.

^ Where ‘downstream indirect GHG emissions’ refers to the emissions associated with transport, and third party end-use of LNG, condensate and domestic gas products.

7.2.4 Light emissions

Source

Activities identified as having the potential to result in light emissions are:

- navigation and operational lighting from the platform within the OA.

Potential impacts and risks

Impacts	C	Risks	C
Light emissions may result in: • localised and temporary change in ambient light.	5	A change in ambient light may result in: • attractant for light-sensitive species and in turn affect predator-prey dynamics	5

Consequence evaluation

Localised and temporary change in ambient light

The platform lighting system includes general and emergency lighting to satisfy necessary safety, visibility, and task illumination requirements. Additionally, the flare tip (~150 m above sea level) includes a small, constantly lit LP flare (Section 3.3.2.3). The HP flare is for upset conditions, and given it's non continuous and infrequent use is not discussed further in this evaluation.

Monitoring undertaken by Woodside (Ref. 491) indicates that light density from navigational lighting on a MODU attenuated to below 1.0 lux and 0.03 lux at distances of ~300 m and ~1.4 km, respectively. Light densities of 1.0 lux and 0.03 lux are comparable to natural light densities experienced during deep twilight and during a quarter moon.

Based on Woodside (Ref. 491), CAPL expects that the platform will result in temporary changes to ambient light emissions no larger than a radius of ~1.4 km. Operational and navigational lighting is expected to be similar in comparison to a MODU, therefore referencing this modelling is considered an appropriate approach for this consequence evaluation.

Given the limited extent of the change arising from platform lighting, the impacts associated with a direct change in ambient light levels was determined to be Minor (5).

Acting as an attractant to light-sensitive species and in turn affecting predator–prey dynamics

There is no evidence to suggest that artificial light sources adversely affect the migratory, feeding, or breeding behaviours of cetaceans. Cetaceans predominantly use acoustic senses rather than visual sources to monitor their environment (Ref. 430), so light is not considered to be a significant factor in cetacean behaviour or survival.

Light-sensitive fauna (including reptiles, birds and fish) are the species most at risk from this aspect and thus are the focus of this evaluation. As identified in Section 4, several marine species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the OA. The BIAs that overlap or are proximal to the platform (<2 km), include:

- Flatback Turtle (internesting buffer)
- Whale Shark (foraging)
- Wedge-tailed Shearwater (breeding).

Studies conducted between 1992 and 2002 in the North Sea confirmed that artificial light was the reason that birds were attracted to and accumulated around illuminated offshore infrastructure (Ref. 326) and that lighting can attract birds from large catchment areas (Ref. 484). These studies indicate that migratory birds are attracted to lights from offshore platforms when travelling within a radius of 5 km from the light source, but their migratory paths are unaffected outside this zone (Ref. 426). The *National Light Pollution Guidelines* (Ref. 169) indicate that a 20 km buffer or exposure area can provide a general precautionary light impact limit based on observed effects of sky glow on marine turtle hatchlings demonstrated to occur at 15–18 km (Ref. 299; Ref. 269) and fledgling seabirds grounded in response to artificial light 15 km away (Ref. 407). At its closest, the OA is located ~50 km from the coast (Montebello Islands). As light emissions from the platform are expected to result in a change to ambient conditions up to a maximum of ~1.4 km from the source, no coastal areas (and therefore turtle hatchlings or fledgling seabirds) are expected to be exposed.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 129) identifies light emissions as a key threat because it can disrupt critical behaviours. However, the Recovery Plan also notes that

critical behaviours are focused on nesting (therefore coastal areas), as well as disrupting hatchling orientation and sea-finding behaviours of hatchlings. Given the platform is located offshore, light emissions would not affect critical behaviours as described in the Recovery Plan. In addition, a study by Whittock et. al. (Ref. 483) reported that Flatback Turtles preference habitats within proximity of the coast and at relatively shallow depths during the internesting period. Specifically, during the study, a maximum distance from the nearest coast and maximum water depth of 27.8 km and <44 m respectively were recorded; and mean maximum distance away from the nearest coast and mean water depth being less than 6.1 km and <10 m respectively (Ref. 483). Given that the platform is located ~50 km from the nearest coast (Montebello Island), even though the Flatback Turtle internesting area may be exposed to changes in ambient light levels, due to the distance offshore and water depths (>70 m) it is very unlikely that this exposure would lead to any significant impact.

Anthropogenic disturbance and artificial lighting is identified as a threat within the *Wildlife Conservation Plan for Migratory Shorebirds* (Ref. 201). However, only a small number of threatened or migratory bird species would be expected to be present in this area. Light emissions that attract a small number of individual seabirds

Because light emissions have the potential to cause temporary impacts to a small number of protected species over the course of the activity, CAPL has ranked the consequence associated this impact as Minor (5).

ALARP decision context justification

Offshore platform operations and subsequent light emissions are commonplace in offshore environments nationally and internationally.

During stakeholder consultation, no objections or claims were raised regarding light emissions arising from the activity.

The impacts and risks associated with light emissions are well understood, and considered lower-order impacts and risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
None identified	No controls have been applied for these impacts and risks as light management is a lower-order impact and risk; no industry standard controls are required for offshore light emissions where minimal impacts and risks are present.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
N/A	N/A	N/A

Likelihood and risk level summary

Likelihood	The platform is located in Commonwealth waters, ~50 km from nearest coast (Montebello Islands). The extent of exposure from measurable changes to ambient light is estimated to be limited to an area within ~1.4 km from the platform. As such, the likelihood of exposing sensitive receptors resulting in the identified consequence was considered Remote (5).
Risk level	Very low (9)

Determination of acceptability

Principles of ESD	The impacts and risks associated with this aspect is disruption to light-sensitive species behaviour, which given the location, is not considered as having the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.

Relevant environmental legislation and other requirements	Legislation and other requirements considered for this aspect include: • *National Light Pollution Guidelines* (Ref. 169) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129) • *Wildlife Conservation Plan for Migratory Shorebirds* (Ref. 201) • *National Recovery Plan for albatrosses and petrels (2022)* (Ref. 156).	
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.	
External context	No objections or claims were raised regarding light emissions arising from the platform.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measures**	**Measurement criteria**
N/A	N/A	N/A

7.2.5 Underwater sound

Source

Activities identified as having the potential to result in continuous non-impulsive underwater sound are:

- start-up and operation of the platform.

The platform topsides generate airborne sound emissions, which may result in changes to ambient underwater sound levels. As machinery is mounted on the deck of the platform, most sound is transmitted to the marine environment from the air or radiated into the water via jacket legs and risers.

During detailed design for the topsides, several studies and investigations were undertaken and limits for individual items of equipment have been set at a maximum above-sea noise level no greater than 80 dB(A) @1 m (general equipment limit). Sound generated by the valves and transmitted into the HP flare header can exceed 100 dB(A) @1 m externally.

A study by Gales (Ref. 246) reported that the strongest underwater noise levels from platforms during production operations are of relatively low frequency (<100 Hz, mostly between 4-38 Hz), with sound levels of 110–130 dB re 1 µPa @100 m, although actual sound produced by a Platform depends on a number of factors including structural design and material, operation and underwater structural surfaces(Ref. 246). However, monitoring programs have shown that underwater sound rom platforms is usually very low or not detectable (Ref. 297).

Potential impacts and risks

Impacts	C	Risks	C
Airborne sound emissions may result in: • localised and temporary change in ambient underwater sound.	6	N/A	-

Consequence evaluation

Ambient underwater sound levels typically range from 45-60 dB re 1 µPa in quiet regions (very calm, low wind seas and light shipping) to 80-100 dB re 1 µPa for more typical conditions, and >120 dB re 1 µPa during periods of high rain, strong winds and biological choruses from vocalising species (Ref. 279).

As indicated by Gales (Ref. 246), underwater sound resulting from platform operations is typically within 110-130 dB re 1 µPa @100 m), which is within or slightly above ambient underwater sound levels. The spatial extent of detectable underwater sound above ambient conditions would be limited to very close proximity of the Platform (within a few hundred meters).

As such, underwater sound emissions associated with platform operations are expected to result in limited environmental impacts and consequently have been ranked as Incidental (6).

Further to this, as sound emissions arising from platform operations are expected to be minimal and well within ambient underwater sound levels throughout all operations, no credible impacts to marine fauna have been identified or considered further.

ALARP decision context justification

Noise emissions associated with the operation of facilities are commonplace in offshore environments nationally and internationally. During stakeholder consultation, no objections or claims were raised regarding noise emissions arising from the activity.

The impacts associated with noise emissions are considered lower-order impacts in accordance with Table 5-3, and impacts to marine fauna from these emissions are not expected.

As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
None identified	No controls have been applied for these impacts as airborne sound management is a lower-order impact; no industry standard controls are required for offshore sound emissions where minimal impacts are present.

Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	N/A	
Risk level	N/A	
Determination of acceptability		
Principles of ESD	The impacts associated with this aspect are limited to localised, incidental changes in ambient underwater sound. As such, this aspect is not considered as having the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No legislation or other requirements were deemed relevant for above-surface noise emissions arising from platform operations.	
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.	
External context	No objections or claims were raised regarding underwater sound emissions arising from the platform.	
Defined acceptable level	These impacts are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
N/A	N/A	N/A

7.2.6 Planned discharges—Produced water

Operation of the PW system is described in Section 3.3.2.6, and generates the environmental aspect of planned discharges of PW. Upon the introduction of well fluids into the hydrocarbon system, PW is physically separated from the well fluids at the platform, treated and discharged as per Section 3.3.2.6.

PW may contain various constituents such as metals, petroleum hydrocarbons (e.g. TPH, BTEX/MAH and PAH [predominantly naphthalene]), glycols (e.g. MEG and TEG), phenols, organic acids, NORMS, and residual process chemicals. Drilling completion fluid constituents may also be present during well clean-ups. During clean-up, MEG volumes discharged from the platform are predicted to be approximately 140–400 m^3 per well, usually discharged over one to eight days, with the discharge predominantly comprising MEG and water, with small concentrations of sodium bromide, filter cake/drilling muds (drilling completion fluids) and constituents in PW discussed above.

Baseline water column and sediment sampling as well as a benthic habitat survey was conducted prior to PW discharge, providing details on the water quality and habitats within the discharge zone (Ref. 465).

PW analysis and modelling, and a comprehensive field verification campaign (Section 7.2.6.2) have shown that dilutions exceed those required to meet environmental quality criteria (EQC) at a boundary 850 m from the platform (i.e. the discharge zone). Water quality samples taken during model verification works did not detect hydrocarbons (TPH and BTEX) at distances >5 m, or phenols at distances >15 m, from the platform. Metal concentrations (above background) were below EQC within ~25 m of the discharge point (Ref. 8).

In practice, the water quality of the PW plume will be evaluated by considering dilutions to the edge of the near field (discussed further in Section 7.2.6.2). The plume will notably be further diluted in the far field prior to reaching the discharge zone boundary.

7.2.6.1 Guidelines

Commonwealth guidance on water quality as directed by ANZG (Ref. 20) have been applied, recognising that waters around the platform are outside any marine protected areas, ~140 km from the mainland, ~70 m water depth, and is also in the vicinity of other oil and gas infrastructure and activities. As such, where available the 95% species protection (PC95) marine criteria[47] has been adopted from ANZG (Ref. 20) as the environmental trigger to assess impacts for a slightly-to-moderately disturbed system and are to be met at the discharge zone boundary.

7.2.6.2 Modelling

PW discharge modelling has been conducted to quantify and assess the extent of the highly buoyant PW discharge plume (including behaviour of dissolved and particulate constituents), which in turn is used to determine whether ANZG guidelines are met at the discharge zone boundary. Multiple phases of modelling have occurred:

- during the development of the EIS (Ref. 57)

[47] In some instances ANZG directs the use of the 99% species protection (PC99) value for slightly to moderately disturbed systems.

- optimised during FEED (Ref. 466)
- refined in 2016 (Ref. 185)
- additional modelling 2018 (Ref. 186)

An in-field survey was also undertaken during 2018/2019 (Ref. 187) to provide field validation of modelling outputs.

Additional scenarios will continue to be modelled when required, as well as modelling verification (e.g. on trigger or during field sampling campaign), using relevant information from sampled fluid composition, field results, and baseline data, to improve the understanding of the behaviour of the PW plume and for future contingency planning.

The EIS and FEED phase models were based on Cornell Mixing Zone Expert System (CORMIX) (near field) and CMS-Flow (far field) while the operational modelling uses CORMIX (near field) and MIKE 3FM (far field). Modelling included various temperature, salinity, and flow rates encompassing the start to end of field life. The results show the size, location of the plume, achieved dilutions, and associated dissolved (represented by TPH) and particulate (represented by mercury) concentrations.

Near field (or CORMIX) modelling predicts dilutions at the edge of the near field region (NFR), and the extent of the NFR. The NFR varies with discharge flow rate, salinity/density, and temperature. These simulations can predict dilution at 850 m when it is within the NFR (i.e. near field extends past 850 m). For cases where the NFR is <850 m, the end-of-near-field dilution applies plus additional far-field dilution (which is not available from CORMIX in any reliable manner). For the range of anticipated flow rates up to the maximum design, and considering median current, modelling predicts the edge of the NFR to fall within 850 m, ranging from ~755 m to ~125 m for flow rates of 10 m^3/h and 265 m^3/h respectively (Ref. 185; Ref. 186). Dilutions are in excess of near-field predictions at the discharge zone boundary.

The in-field verification of dilutions undertaken in 2018 and discussed further below, showed the model to be conservative (with measured dilutions exceeding those modelled; refer to ‘In-field modelling verification’), however not to the extent that the mixing zone boundary should be revised.

Dilution modelling and in-field verification indicate rapid dilutions occur within relatively close proximity to the discharge point, and hence over a discrete and localised spatial extent. Dilutions in the order of ~1,000 were predicted by CORMIX within ~20 m of the discharge point; while field measurements verified the plume was diluted by ~5,000 at ~30 m from the discharge point (Ref. 187). The large dilutions achieved within a relatively short distance is due to the small size of PW discharge, and the receiving environmental being of relatively energetic flow, with the plume traversing ~45 m to the surface as it rises buoyantly (Ref. 185).

For particulates, modelling shows accumulation is a function of particle size, with larger particle sizes dropping out of the plume faster, within closer proximity to the discharge point, leading to more rapid accumulation rates. For particulates, higher concentrations in sediment may be anticipated to occur closer to the platform. For current and anticipated levels of particulate metals (such as mercury), modelling does not indicate exceedance of ANZG sediment quality criteria. Should levels change beyond those anticipated, modelling indicates ANZG sediment quality criteria can continue to be met with treatment (such as filtration). Ongoing monitoring controls discussed in Section 9.4.1 and further modelling (as required)

will enable identification of potential exceedances and allow for adaptive management / contingency actions as per Section 9.4.1.

In-field modelling verification

In November 2018, a comprehensive field campaign (Ref. 187; Ref. 406) was executed to validate that environmental guidelines were being achieved, and to validate model predictions. The campaign involved controlled injection of rhodamine WT (RWT) dye into CW and PW discharges from the platform, in conjunction with intensive in situ measurements of the resulting 'spiked' plumes. Field measurements involved sample retrieval and fluorometry directly from the vessel, fluorometry and sample retrieval from an ROV despatched to traverse the plume, and sensor measurements by ocean glider and an unmanned aerial vehicle (AUV) to ascertain marine conditions, map plume geometry, and quantify dilutions associated with the discharge plumes. An acoustic doppler current profiler (ADCP) and temperature string were deployed on a fixed mooring for the duration of the campaign.

The validation campaign was executed during environmental conditions which were weak in terms of tide, winds, waves, as well as total and residual flows, and under conditions with reasonably strong ambient stratification (Ref. 187).

The results from a comparison between the RWT measured dilutions and the CORMIX predictions showed:

- lowest dilutions measured within 50 m of the platform align well with the envelope of CORMIX predictions
- further afield, the lowest measured dilutions were typically an order of magnitude higher than the envelope of centreline dilutions predicted by CORMIX
- two notable dye concentration peaks measured at ~500 m and ~700 m from the platform showed the closest alignment to CORMIX centreline dilutions, while still being roughly a factor of two more dilute than predictions (Ref. 187).

It is acknowledged that the envelope of centreline dilutions predicted by CORMIX is based on a series of static conditions (i.e. both PW discharge, and ambient conditions, are assumed to be constant, whereas in reality both are temporally variable). As such, it can be overly conservative to compare the full envelope of all possible CORMIX solutions against all field measurements (Ref. 187).

The results of the field campaign strongly suggest that typical near and far field methodologies, including the CORMIX approach applied at the approval stage of the Wheatstone Project, conservatively underpredict the PW plume dilution at the 850 m discharge zone boundary of the Wheatstone Platform (Ref. 187). This appears to be due to platform-induced turbulence (local flow concentration through the platform and associated turbulence around the base, legs, and structural cross-members) which induces additional mixing in the lee of the platform (Ref. 187). Additional conservatism is introduced into the model when considering the prevailing conditions during the field survey which occurred during a period of ambient stratification, neap tides, and small residual current speeds (which generally reduce dilutions) (Ref. 187; Ref. 8).

Mixing zone for risk assessment

Based on average daily flow rates overboard since start-up, PW discharge flow rates have varied ~10–50 m^3/h. The rate of PW discharge varies during normal operations based on several factors including presence of cut water within online

wells, and production rates. Planned activities under this EP are not expected to significantly vary, such that it would result in a significant change to the estimated PW discharge volume or characteristics over the next five-year in-force period of this EP.

These operational PW discharge flow rates (~10–50 m^3/h) are well within the ranges (10–265 m^3/h) used in previously modelling scenarios, and as discussed above, the modelling and verification study have confirmed the mixing zone boundary is appropriate for the current state of operations across a range of conditions that are likely to be experienced (e.g. higher salinity, differing metocean conditions, etc.).

In addition, monitoring data to date from the Platform Waste Water Discharges Monitoring Program (Section 9.4.1) have not indicated an exceedance of the EQC at the edge of the mixing zone boundary.

As such, CAPL consider that the previously determined mixing zone (~850 m from the platform) therefore remains appropriate for the range of conditions likely to be experienced by the platform during the in-force period of this EP, and this mixing zone is appropriate for use in the following risk assessment.

7.2.6.3 Risk Assessment

Source

Activities identified as having the potential to result in planned discharges from the platform are:

- produced water treatment system.

Potential impacts and risks

Impacts	C	Risks	C
Planned discharges of produced water may result in:		A change in ambient water or sediment quality may result in:	
• localised and temporary reduction in water and sediment quality.	4	• indirect impacts to fauna arising from chemical toxicity	5
		• indirect impacts to marine habitats arising from connectivity or chemical toxicity	4

Consequence evaluation

Localised and temporary reduction in water and sediment quality

The spatial extent of water quality changes associated with the PW discharge is expected to be limited to the discharge zone (850 m). At the boundary of the discharge zone, all constituent concentrations are predicted to meet ANZG PC95 guidelines (Ref. 20) or be equivalent to reference site concentrations. Within the discharge zone, constituents may be at concentrations above the ANZG guidelines.

The PW plume is dynamic and moving constantly depending on the tides, currents, winds, and internal waves; and the plume largely remains in the upper water column due to the positively buoyant characteristics of the discharge (Ref. 466; Ref. 185). Due to the temporal variability and limited spatial extent of the plume, comparison to EQC derived from ecotoxicological tests typically conducted over 24-96 hours, is likely conservative compared with more representative, shorter environmental exposure durations (Ref. 253; Ref. 252). In terms of the spatial extent for seabed interaction, the modelling predicts the plume may reach the seabed only once substantially diluted and therefore well below ANZG trigger guidelines.

Any particulate fallout from the PW plume leading to accumulation is a function of particle size, with larger particle sizes dropping out of the plume faster, within closer proximity to the discharge point. Modelling does not indicate exceedance of ANZG sediment quality criteria.

Given that the extent of change in ambient water and sediment quality is expected to be within 850 m of the platform, and for the duration of platform operations, CAPL has ranked the consequence as Moderate (4).

Potential impacts to marine fauna and marine habitats

Based on the spatial extent of the water quality changes and potential interaction with the seabed, identified environmental values and sensitivities that may be exposed to PW include the ridgeline benthic habitats, ridgeline fish communities, and migrating or foraging whale sharks or cetaceans (Section 4.3.1). Although there is no evidence to suggest the level of diversity is greater in the platform area than the remaining area of the ridgeline (Ref. 465), the hard substratum habitats at the platform ridgeline are included in this assessment.

Potential impacts to the identified environmental values and sensitivities depend on the nature of the constituents in the PW discharge:

- The aquatic toxicity of MEG is very low; and is on the OSPAR list of substances that are considered to pose little or no risk to the environment once released (PLONOR) and is not expected to result in adverse impacts to habitats or fauna.
- The toxicity of TEG was reviewed by Ballantyne and Snellings (Ref. 33) and was reported to have LC_{50} values at gram per litre concentrations, indicating that the compound is effectively non-toxic by US EPA criteria. This is consistent with the Offshore Chemical Notification Scheme (OCNS) that has assessed TEG via the Chemical Hazard Assessment and Risk Management (CHARM) and assigned the lowest CHARM rating of Gold.
- Dispersed oil can be ingested by marine fauna, leading to toxicity-related impacts, causing adverse health impacts to marine biota (Ref. 15, Ref. 386). Fish and shellfish are particularly sensitive to oil exposure, and certain toxins can bioaccumulate. However, the toxicity of an oil is related to the bioavailability of the hydrocarbon components. The soluble or semi-soluble hydrocarbon components of a dispersed oil may dissolve and become bioavailable. Dissolved oils generally have a high toxicity, due to constituents such as BTEX, PAHs, and phenols, amongst others. Studies have shown that PAHs typically exert the most toxic effects due to their semi-soluble and not highly volatile nature, such that they can persist in the environment long enough for prolonged exposure to occur (Ref. 239). While BTEX may be a more abundant component of the oil in PW, it is highly volatile, and is typically rapidly lost either during treatment, initial mixing or through volatilisation once at water surface (Ref. 239; Ref. 351; Ref. 422). BTEX is also not known to accumulate to a large degree in marine organisms (Ref. 422).
- A variety of metals may be present in PW in varying concentrations, including aluminium, barium, boron, chromium, cobalt, iron, manganese, molybdenum, nickel, and strontium. Some metals can cause adverse impacts to the marine environment, while others are a necessary component to maintain life, with some being essential at low concentrations, but potentially toxic at high concentrations (Ref. 303). Mercury and its compounds can have high acute (short-term) and high chronic (long-term) toxicity on marine fauna. Particulate mercury in PW is typically in the form of the insoluble mercury sulfide (HgS). Mercury sulfide particulates are likely to settle near the point of discharge due to their high density and relative stability as a solid within sediments.
- A range of process chemicals (Section 3.3.2.5) may be present in very low concentrations in the PW discharge however are not expected to change the risk profile of the treated PW outside the discharge zone.
- During well clean-ups, drill completion fluids may be present within the PW discharge. Drill fluid additives are typically either completely inert in the marine environment, naturally occurring benign materials, or readily biodegradable organic polymers with a very fast rate of biodegradation in the marine environment (Ref. 107). Examples of drilling additives typically used include sodium chloride, potassium chloride, bentonite (clay), cellulose polymers, guar gum, barite, and calcium carbonate (Ref. 107).

Marine fauna

Fish communities of the ridgeline may be exposed to the water quality changes, while migrating cetaceans and foraging whale sharks may occasionally also intersect the discharge zone.

As the plume is dynamic and moving constantly depending on the tides, currents, winds, and internal waves, transient biota such as migrating whales or whale sharks, are unlikely to be exposed to constituent concentrations for extended durations. Given the limited spatial extent of water quality changes (~850 m from the platform), the infrequent and short duration of the potential interaction of these fauna with the PW plume, and that only a small proportion of the migrating/foraging population can intersect the discharge plume, the potential impacts to large mobile marine fauna are expected to be short-term and localised. Therefore, the remainder of this consequence assessment is focussed on the fish communities of the ridgeline.

Of the constituents present in the PW discharge, hydrocarbons (such as TPH, BTEX (MAH) and PAHs), phenols, organic acids, and metals in their concentrated forms have the potential for acute and chronic affects to marine biota.

Fish (including those associated with the ridgeline habitat), may be exposed to low concentrations of hydrocarbons and other constituents in the water column within the discharge zone. However, the plume is strongly buoyant and interaction with the seafloor will only occur after vertical mixing of this plume. For example, TPH discharged at 30 mg/L requires 600 dilutions in order to be diluted below detection by method EP080/071 at ALS (50 µg/L) and 4,300 dilutions to be below chronic low reliability trigger criteria of 7 µg/L suggested by Tsvetnenko (Ref. 455). Modelled dilutions and field verification for routine operations shows dilutions to be in excess of these values at the edge of the NFR for discharge rates up to 150 m^3/h (noting that this is achieved at ~155 m from the platform). Additional dilutions will occur in the far field as well as in the vertical plane prior to contacting the seabed. Further, some fish are able to metabolise and excrete hydrocarbons, potentially reducing physiological effects to fish exposed to PW hydrocarbons (Ref. 32).

It is not predicted that PW hydrocarbons will have long lasting and permanent impacts on fish populations. For example, Bakke et al. (Ref. 32) reported that Alkylphenols and PAHs in PW are rapidly metabolised in Atlantic cod (*Gadus morhua*). Similarly, King et al (Ref. 306) reported hydrocarbon-degrading bacteria in the liver and bile of fish collected from their study on the NWS. Bakke et al. (Ref. 32), who reviewed individual, population and ecosystem level biological responses to PW further concluded that the spatial scale of impact from PW discharge was insufficient to impact populations of marine organisms. Reed and Hetland (Ref. 402) reported that north Atlantic species of demersal fishes exposed to Alkylphenols associated with PW was too low to impact the reproductive viability of the stocks of these species. King et al. (Ref. 306) found that populations of two species of fish (*Carangoides* sp. and *Plectropomus* sp.) near a platform discharging PW into the NWS, Australia, may have been exposed to chronic, low levels of hydrocarbon pollution. However, they suggested that this result is inconclusive given that there was evidence that 'impact' and reference populations of these species, at the Montebello Islands, were being exposed to hydrocarbons seeping naturally into the marine environment.

In summary, based on the review of available literature, and considering the nature of the PW hydrocarbon constituents, the substantial dilution before the plume reaches the seabed and associated ridgeline fish communities, it is predicted there will be no acute and chronic impacts to fish populations on the ridgeline or other adjacent habitats.

Fishes can also bioaccumulate heavy metals through food and via water, but uptake by individuals and by different species of fish is dependent on many factors including the metal's form (inorganic versus organic), water chemistry and behavioural traits (feeding, range) of the fish species in the receiving environment. Ref. 24 reviewed acute and chronic toxicity of metals relating to a variety of fish species and found mercury (inorganic and methyl) and copper to be the most toxic. Some heavy metals, such as mercury are persistent and can bioaccumulate (Ref. 359); however some fish species may be able to metabolise metals potentially reducing the risk of accumulating lethal concentrations (Ref. 272). PW sampling has detected low levels of mercury, although it is not consistently detected. Modelling and verification shows 1,000-5,000 dilutions within close proximity to the discharge. For bioaccumulating substances such as mercury, the ANZG 99% inorganic (dissolved) mercury criteria is anticipated to be met within this region. Therefore, the spatial extent of the zone where bioaccumulating substances exceed WQ guidelines is predicted to be small.

The long-term effects of metals on fish populations are not straightforward to predict given most studies examining the toxicity of metals on fishes were laboratory based and often characterized by treatment concentrations that free ranging fish in the wild are unlikely to be exposed to for even short durations. Further, given the size of the mixing zone relative to available habitat and the wide distribution of most fish species in the region it is unlikely sufficient number of fish will be exposed to concentrations over a duration that would illicit a population level response. For this reason, the ecosystem function of fishes in the area is not predicted to be impacted.

In summary, exposure of constituents such as metals to fish communities, could result in localised toxic effects on individual fish, but with no ecosystem function changes or chronic level impacts to fish populations. The potential consequences of water quality changes from the PW discharge are localised and long-term impacts to individual marine fauna, ranked as Minor (5).

Marine habitats

The PW discharge plume is buoyant and will move towards the surface soon after discharge (Ref. 466; Ref. 185). In the unlikely event dissolved constituents in the plume contact the seabed; this would occur post the plume reaching the surface, where modelling shows ANZG criteria will

be met. Further dilutions would then occur from the surface, though ~70 m water column to the seabed.

Particulate fallout from the PW discharge may deposit on the seabed. Based on the modelling results, for the spatial extent of seabed/sediment interaction, particulate fallout from the PW plume is likely to be highest within the vicinity of the platform, and metals deposition (such as mercury) is predicted to meet the ANZG sediment triggers based on sampled concentrations and forecast flowrates (Ref. 185). Should flow rates or composition change beyond those anticipated, modelling indicates sediment quality criteria can continue to be met with treatment (such as filtration).

As per Section 4.3.3.4.1, seabed adjacent to the platform area appears to have only an occasional coverage (2–10% cover) of an array of benthic sessile invertebrates (Ref. 465). The platform ridgeline habitats are considered in this assessment to take into account that hard substratum can provide habitats that generally support higher amounts of benthic fauna (Ref. 216). As per Section 4.3.3.4.1, the ridgeline habitat includes gorgonians and sponges which may be exposed to very diluted PW (with dissolved constituents in the water column) and particulate metals depositing at the seabed.

The potential for PW to reduce connectivity of organisms is based on the conservative premise of an 850 m discharge boundary, which, in the worst case that all benthic organisms and habitats within the mixing zone were affected, would cover the width of the ridgeline, potentially fragmenting this habitat in two. Given the positive buoyancy of the PW, any diluted constituents are highly unlikely to contact the sea floor, and only heavy particulate matter, such as some metals, have the potential to sink and directly impact organisms. As such, the potential to impact benthic organisms is reduced, and connectivity of pelagic organisms that are largely transitory is highly unlikely to be impacted.

Marine organisms maintain connectivity among populations via movement of individuals at different life-history stages. In the marine environment the most prevalent mechanism of movement is the movement of gametes from broadcast spawning taxa with oceanographic currents (Ref. 126). Due to the broadcast spawning strategy and pelagic larval stage of most marine organisms, they have less reliance on habitat continuity to maintain population connectivity than terrestrial species, which can be affected by habitat fragmentation at even small scales (e.g. Ref. 418; Ref. 346). Evidence of maintained connectivity among fragmented habitats in marine organisms can be seen in deeper sea populations separated by thousands of kilometres (Ref. 35; Ref. 443). These principles of connectivity are considered in the design of marine reserves, and established literature suggest that connectivity among reserves is maintained even when they are separated by distances of tens of kilometres (Ref. 333; Ref. 382).

Broadcast spawners release gametes into open water for fertilization and larvae development. Gametes and larvae are transported with oceanographic currents, which can influence population structure (Ref. 345; Ref. 304). Broadcast spawning corals, such as those in the sub-class Hexacorralia, can maintain high levels of genetic connectivity among populations separated by up to 25 km (Ref. 346), with the average dispersal distance of mobile and sessile invertebrates being between 25 km and 150 km (Ref. 382). Gorgonians, a dominant taxa on the ridgeline, are largely broadcast spawners.

Not all marine species are broadcast spawners with a pelagic larval stage, and examples include species that brood eggs or embryos. Brooders do not broadcast spawn gametes, but instead take some level of parental care of eggs and embryos, either through nesting, guarding, substrate spawning or similar such mechanisms. Some taxa, such as some gorgonians (Ref. 17) and fish are brooders and have a more limited dispersal range compared to broadcast spawning species (Ref. 126). However, even brooding invertebrates, such as some gorgonians can maintain connectivity over distances on the order of kilometres (Ref. 340).

Therefore, even in the worst case that 850 m of benthic habitat and species around the platform are affected by PW (likely a significant overestimate since PW is buoyant, and modelling and verification indicates high levels of dilution in the order of ~1,000-5,000 in close proximity to the discharge point), there are unlikely to be any significant effects of the PW on habitat connectivity due to fragmentation. When considering the potential for the platform to fragment a section of the ridgeline, the fragmented distance is minor compared to dispersive capability of taxa, even brooders.

Corals and other marine invertebrates, including bivalves, can take up contaminants, such as heavy metals, via seawater or through feeding (Ref. 122). In some locations, such as the NWS, this may occur independent of human activity because oil seeps naturally from the seafloor (Ref. 306) or there is metal bearing substratum. For corals, the uptake of heavy metals through feeding can involve polyp capture of particulate matter, contaminants adhering to sediment or in plankton (Ref. 122). A review of literature was undertaken to better understand the potential risk

of acute and chronic impacts to the marine habitats and communities (e.g. gorgonians and sponges) on the ridgeline from PW constituents.

In terms of constituents, the review focused on heavy metals and PAHs that may accumulate in some organisms. There are a limited number of toxicological studies relating to sponges and gorgonians, and especially to taxa found in the lower euphotic zone or relating to sea fans without zooxanthellae. The effects of contaminants on shallow water zooxanthellae corals (e.g. Ref. 122) are better understood, but extrapolations of these findings to deep water non-zooxanthellae corals may be uninformative. For example, Bastidas and Garcia (Ref. 34) found that zooxanthellae in a host coral of the species *Porites astreoides* accumulated more mercury than the polyp tissue.

The literature suggested that acute impacts to gorgonians and sponges from contaminants, under the applied experimental treatments, are non-lethal, at least for adult colonies. Non-lethal responses associated with heavy metals and hydrocarbons included sclerite sloughing, mucus secretion and tissue necrosis in gorgonians (Ref. 481; Ref. 122). Physiological responses, such as change in respiration rates, were also apparent in at least one species of gorgonian as a result of thermal stress (Ref. 229). In terms of sponges, PAHs and heavy metals may inhibit the settlement of larvae (Ref. 120; Ref. 121).

The long-term or chronic effects of heavy metals and other contaminants on these organisms are not well documented and are difficult to predict. One reason for this is that most experiments assessing the effects of contaminants occur over weeks or months. In contrast, discharges will normally last years or decades. Experimental treatment levels (concentrations) may also be unrealistically high over ecologically relevant spatial scales. Another reason is that most reported field-based studies investigating marine community level responses to discharges relating to semi-enclosed water bodies, such as bays, or coastal waters (Ref. 424). In terms of PW at the platform, discharge will be in waters ~70 m deep and in a dispersive, open water environment ~140 km off the mainland.

Some organisms may accumulate heavy metals and PAHs independent of human actions. For instance, oil seeps in the NWS might be contributing hydrocarbon into marine waters and thus organisms are exposed naturally to chronic concentrations of hydrocarbons (Ref. 306). It is unclear if this would increase or decrease their sensitivity to exposure of hydrocarbons from other sources. Some gorgonians and other marine organisms are known to accumulate heavy metals and other contaminants (Ref. 122). However, there is potential for gorgonians to eliminate heavy metals through mucus secretion and other mechanisms (Ref. 34; Ref. 122) and azooxanthellate hard corals, such as *Tubastraea*, can incorporate metals into skeleton without suffering obvious signs of stress (Ref. 122).

Although heavy metals and PAHs can potentially result in sub-lethal and lethal effects to individual corals under experimental conditions, it is unclear if discharges of PW, especially in deep water and dispersive marine environment will have a population or ecosystem level response. This will depend on the total population at risk from PW discharge. If impacts remain localised (i.e. within the predicted mixing zone) it is a reasonable assumption that population and ecosystem level responses are not predicted. As mentioned previously, modelling has predicted that gorgonians and sponges inside the discharge zone may be exposed to constituents above ANZG guidelines and that the populations outside will remain unaffected by PW discharge. This prediction is supported, in part, by Burns et al. (Ref. 43) who investigated the dispersion and fate of PW discharge from a platform in waters ~20-24 m deep off the NWS. Using bioaccumulation assessments of oysters and water quality modelling, the authors concluded that potential biological impacts from oil would remain largely within ~900 m of the discharge point. They also noted that due to degradation and dissipation processes there was no long-term build-up of contaminants in sediment (Ref. 43). Similarly, Bakke et al. (Ref. 32), who reviewed individual, population and ecosystem level biological responses to PW in Norway waters, also concluded that the spatial scale of impact from PW discharge was insufficient to impact populations of marine organisms.

In summary, heavy metals associated with PW have the greatest potential for acute and chronic toxicity effects on marine biota. PAHs can have chronic toxic effects but are less persistent compared with some metals. Additionally, results to date have shown PAH comprises predominantly of naphthalene, often with other individual PAH analytes not being consistently detected and naphthalene values have not resulted in an exceedance of ANZG guidelines at the boundary. Over the years, the deposition of metals (including mercury) around the platform could have toxic effects on marine biota associated with the ridgeline, however based on modelling and PW analysis, exceedance of ANZG sediment quality criteria is not anticipated. Should flow rates or composition change beyond those anticipated, modelling indicates sediment quality criteria can continue to be met with treatment (such as filtration). Additionally, if metals are taken-up by gorgonians and sponges, the effects will not necessarily lead to lethal effects in adults. Some

organisms, such as gorgonians, have the capacity to metabolise heavy metals and other constituents such as PAHs. However, some metals, depending on the concentration, may inhibit larvae settlement.

Ongoing PW analysis, as well as modelling and verification, indicate the risk of potential impacts to the marine habitat outside the boundary is anticipated to be incidental. That is, exposure of habitat and marine life to PW is anticipated to have a limited environmental impact outside the boundary. However, within the boundary (predominantly in closer proximity to the platform), there is increased risk of environmental impact, especially for habitat and fixed organisms such as gorgonians and sponges. The footprint will be localized; however in a worst case scenario, recovery of specific species may be classified as long term. Therefore, the potential impact from PW discharge to the ridgeline habitat is ranked as Moderate (4).

ALARP decision context justification

Offshore facility operations and subsequent planned discharges arising from these facilities are commonplace both internationally and nationally. The control measures to manage the risk associated with planned discharges are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding planned discharges of PW from the activity.

The impacts and risks arising from planned discharges of PW constitute lower-order impacts (Table 5-3). As such, CAPL applied ALARP Decision Context A for this aspect.

Notwithstanding this, CAPL has also considered additional mitigation measures that could potentially lower the risk associated with PW discharges during well clean-up activities.

Good practice control measures and source

Control measure	Source
Hazardous materials selection process	As part of the hazardous materials selection process, hazardous materials that will be discharged to the environment will undergo a detailed environmental assessment, as per CAPL's *Hazardous Materials Management Procedure* (Ref. 76).
PW treatment	The PW treatment system was selected to provide primary and secondary treatment, and tertiary treatment if required, to ensure the 30 mg/L daily average TPH concentration, during normal operations, is met. To manage periods of variable PW composition, for example during well clean-ups, the PW treatment system (or equivalent temporary package) may be utilised. It is possible that during well clean-ups the TPH in the discharge will exceed a 30 mg/L daily average for ~1–8 days for each well. During well clean-up activities PW discharge will not exceed a 100 mg/L TPH daily average, and a 30 mg/L TPH monthly average, to limit the mass load during activities. Modelling and verification (as discussed in Section 7.2.6.2) indicate that TPH will not be detectable in-field within close proximity to the discharge location during normal operations and well clean-ups and the EPO will be met. The daily average TPH is determined using manual laboratory samples. In addition, an analyser is used for process trending to evaluate water quality in between sampling events. If the analyser is off-line or not trending in accordance with expectations, a daily average will be calculated using not less than 4 laboratory samples.
PW monitoring	<u>Routine laboratory sampling</u> Laboratory sampling and analysis will be used to monitor performance of the system. During normal operations, platform laboratory analysis (typically using a Horiba or similar) shall be normally undertaken twice every 24 hours, or not less than 4 times per 24 hours during periods where the analyser is offline or not trending in accordance with expectations. During well clean-up activities, platform laboratory analysis shall be undertaken not less than 4 times per 24 hours. The laboratory TPH analyses methodology will likely be as per ASTM D7066 – Standard Test Method for dimer/trimer of chlorotrifluoroethylene (S-316) Recoverable Oil and Grease and Nonpolar Material by Infrared Determination or similar.

	The laboratory TPH analysis methodology will be verified at a minimum 6-monthly by a NATA certified laboratory. The laboratory sampling equipment and analysis equipment is routinely calibrated in accordance with WHS Procedure for *the Determination of TPH and Oil and Grease in Aqueous Solutions using Horiba OCMA-550* (WS2-1804-PRO-00156) or equivalent. <u>Analyser used to monitor trends</u> An analyser is used for process trending of the PW discharge and may provide an early indication of an increasing TPH discharge value. Continuous monitoring of hydrocarbons in PW is challenging given the complexity of the fluid mixture, its time variable composition with operational status, and the specificity of sensor response to a particular physical or chemical variable within the hydrocarbon mixture being analysed. To improve accuracy of TPH measurement in the PW discharge stream – and subsequently improve environmental management outcomes – a smart analyser solution was developed, which integrates real-time process data from throughout the Wheatstone platform with the best available analyser technology through machine learning algorithms to improve surveillance of TPH levels in the PW. The smart analyser integrates data from multiple equipment sources on the platform, these features currently used by the smart analyser algorithms to predict trends in TPH concentrations of the PW discharge. The high number of features within the predictive analysis allows for contingency should any of the equipment supplying this data be temporarily out of service—if this were to occur, the unreliable data would fall in importance rankings used within the predictive analysis algorithms of the smart analyser but would not prevent the smart analyser from still predicting TPH concentrations. <u>Waste Water Discharges Monitoring Program</u> The Platform Waste Water Discharges Monitoring Program (Section 9.4.1.1) is designed to ensure the nature, extent, and potential effect of the PW and other discharges are assessed, and helps determine changes to water quality, sediment quality, and marine habitats. For normal operations the monitoring program includes: topsides monitoring, field sampling, model verification, and WET testing (or equivalent) and where practicable, allows adaptive management changes to occur. During well clean-up activities, the monitoring program includes topsides sampling to protect the environment, confirm discharges are in-line with those anticipated, allow adaptive management to occur where practicable and inform future campaigns (Section 9.4.1.1.9).
Operating manual and procedures	The *PW Treatment System Operating Manual* (Ref. 111) and *PW High OIW Content Procedure* (Ref. 110) will be implemented when data indicate a potential exceedance of TPH, including data from manual laboratory sampling results (>30 mg/L TPH during normal operations) and analyser outputs (exceedance defined in High OIW content procedure [Ref. 110]). The manual and procedure detail actions to be taken by platform operators to check that the reported data are correct, and, if required, detail corrective actions to be undertaken to address the exceedance. The *PW Treatment System Operating Manual* (Ref. 111) provides information relating to the safe and efficient operation of the PW treatment system. The manual includes a dedicated Environmental Information section summarising OIW targets, sampling and analyser details, and link to the *PW High OIW Content Procedure* (Ref. 110). As per the Manual, the PW system alarm alerts operators should trends approach upper specifications, and also refers to actions in the *High OIW Content Procedure*. The Manual describes initial response and operator actions to respond to the alarm. Steps include field checks, additional manual sampling, checking the analyser results against samples analysed in the platform laboratory and production actions (e.g. correcting chemical injection settings and checking equipment performance). If OIW concentrations continue to increase after implementing the corrective actions, additional steps to choke back on high water wells (i.e. reducing

	high water flows) and directing off-specification PW to rich MEG tank where it can be reprocessed slowly (limited capacity) can be taken. The *PW High OIW Content Procedure* (Ref. 110) provides clear and precise instructions to manage a high TPH content in the PW discharge. The procedure is implemented when there is a high alarm (i.e. analyser alarm) in the PW discharge header or where an individual manual laboratory sample (i.e. not a daily average) returns a level above 30 mg/L during normal operations. The procedure includes steps/actions taken by production, laboratory and CCR personnel to manage the TPH in discharged PW to below the 30 mg/L daily average during normal operations, including re-sampling, treatment system checks, production actions and diverting over spec PW (confirmed by laboratory sample) inboard if required for re-processing prior to release. *The PW High OIW Content Procedure* (Ref. 110) is designed such that operators follow a tiered response that aims achieve the 30 mg/L daily average as far as practicable. *Well Clean Up Procedures* For each well clean-up campaign, specific procedures are developed in accordance with the *Waste Water Discharges Monitoring Program* (Section 9.4.1.1.9). These procedures identify and describe the specific steps/actions taken by platform operators to manage the TPH in discharged PW to below the 100 mg/L daily average and 30 mg/L monthly average as far as practicable during well clean-up activities. Where there is a high TPH analyser alarm or a manual laboratory sample above 100 mg/L, then the steps/actions (e.g. re-sampling, diverting, tertiary treatment, etc.) as defined in the procedure are implemented. A separate limit (100 mg/L daily average) for non-routine and short-duration activities such as well clean-ups, provides a proportional approach to enable start-up of wells, and assist in ongoing OIW management. The inclusion of a 30 mg/L monthly average during non-routine events ensures that the total equivalent loading over a longer (monthly) duration is consistent with that expected during normal operations.
CMMS	To ensure that the PW treatment system instrumentation and equipment, including the analyser, are operating appropriately, preventative maintenance regimes have been developed and incorporated into the CMMS. Maintenance activities are managed through CMMS which is used as the main asset and inventory management system within CAPL for performing and tracking maintenance activities. Through ongoing maintenance, the operability of the system is optimised, reducing the risk of insufficient PW treatment.
CMS	CAPL uses a competency management system (CMS) to track and manage competencies and required training for the operations workforce to ensure minimum levels are met and that personnel are trained and competent to undertake their duties.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
Storage, treatment and disposal (without discharging) during well clean up	A comprehensive assessment of possible options for managing well clean-up discharges was undertaken (Ref. 60). In summary, eight offshore and onshore treatment and disposal alternatives were considered, including treatment in other CAPL facilities and recycling options. The potential environmental benefit is the elimination of the localised and temporary changes to water quality around the platform and therefore reducing the potential exposure to marine values. However, given the	All alternatives resulted in significant additional safety, environmental, logistical, operational, and financial costs (Ref. 60). These costs were primarily related to the storage requirements of the well clean-up fluids on the platform (as opposed to discharging), prior to transport to shore. To enable storage, extra tanks would be required on the platform, imposing additional space and weight requirements for the once-off well clean-ups.

	infrequent and short duration (~1–8 days per well) of well clean-up discharges, and the inert nature of the additional drilling fluids (a constituent not typically part of the PW discharge), limited environmental benefit may be achieved from an alternate storage and disposal pathway compared to marine discharge. In addition, the extra storage requirements on the platform, the additional transfers from the platform, and the burden of onshore treatment, also introduce new environmental impacts and risks.	Modifying the platform to allow temporary storage of well clean-up fluids, would require significant financial expenditure. Transferring the tanks to support vessels would require increased handling and lifting operations, therefore exposing personnel to health and safety risks. Additionally, limited onshore facilities are available to treat, recycle, and/or dispose of such fluids. Therefore, the significant costs of storing, treating and disposing of the fluids are grossly disproportionate to the negligible environmental gain (of avoiding the short-duration well clean-up discharges) and are not a reasonably practicable alternative.
Likelihood and risk level summary		
Likelihood	Given the nature and scale of this activity with standard control measures in place, it is considered Remote (5) that these discharges would result in any impact to the ecological function of the particular values and sensitivities present within the OA.	
Risk level	Low (8)	
Determination of acceptability		
Principles of ESD	The potential impacts and risks associated with this aspect are spatially limited to an area around the platform, which is not considered as having the potential to affect biological diversity and ecological integrity. The highest consequence associated with this aspect is Moderate (4). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No legislation or other requirements were considered relevant to this aspect.	
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • *Hazardous Materials Management Procedure* (Ref. 76). • *PW Treatment System Operating Manual* (Ref. 111) • *PW High OIW Content Procedure* (Ref. 110) • WHS Procedure for the Determination of TPH and Oil and Grease in Aqueous Solutions using Horiba OCMA-550 (Ref. 108) • *Waste Water Discharges Management Plan* (Ref. 73).	
External context	No objections or claims were raised regarding planned discharge of produced water arising from the platform.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	

Environmental performance outcome	Performance standard / Control measure	Measurement criteria
Meet ANZG guidelines* to avoid changes to water quality and sediment quality outside the discharge zone boundary	**Hazardous materials selection process** Hazardous materials discharged through the PW system are subject to the hazardous materials selection process as per the CAPL *Hazardous Materials Management Procedure*	Hazardous materials selection process assessment records (or similar).
	PW treatment PW is treated through the PW treatment system so that during normal operations the concentration of PW discharge does not exceed 30 mg/L TPH (daily average)**	Records (laboratory) indicate that the PW discharge TPH concentration does not exceed 30 mg/L (daily average) during normal operations**
	PW treatment PW is treated through the PW treatment system (or equivalent) so that during well clean-up campaigns the concentration of PW discharge does not exceed 100 mg/L TPH (daily average) or 30 mg/L TPH (monthly average)	Records (laboratory) indicate concentration of PW discharge does not exceed 100 mg/L TPH daily average, or 30 mg/L TPH monthly average during well clean-up campaigns
	PW monitoring During normal operations TPH concentration is measured: • routinely by the laboratory (normally twice every 24 hours)*** • laboratory samples 4 times per 24 hours during periods where the analyser is offline or not trending in accordance with expectations***	Records during normal operations confirm TPH concentrations are measured routinely by the laboratory (normally twice every 24 hours or 4 times per 24 hours during periods where the analyser is offline or not trending in accordance with expectations)***
	PW monitoring During well clean-up campaigns TPH concentration is measured: • routinely by the laboratory (normally 4 samples every 24 hours)	Records during well clean-up campaigns confirm TPH concentrations are measured routinely by the laboratory (normally 4 samples every 24 hours)
	PW monitoring The predictive analysis associated with the smart analyser will be retrained, and performance tested, following operational deployment on the platform on a risk-based frequency	Records confirm that the smart analyser was retrained, and performance tested, with emphasis on scenarios where high TPH levels (>20 mg/L) are recorded via the laboratory sampling. A risk-based calibration review will be triggered in the event of three instantaneous laboratory TPH levels of >30 mg/L where the SMART analyser has failed to provide an accurate prediction.
	PW monitoring The *Platform Waste Water Discharges Monitoring Program* is implemented in accordance with Section 9.4.1	Records confirm the *Platform Waste Water Discharges Monitoring Program* is implemented

	PW monitoring The laboratory TPH analysis methodology verified at a minimum 6-monthly by a NATA certified laboratory	Records confirm offshore laboratory TPH analysis methodology verification is undertaken at least every 6 months via NATA approved laboratory
	PW monitoring PW sampling equipment and laboratory analysis equipment is routinely calibrated in accordance with WHS Procedure for the Determination of TPH and Oil and Grease in Aqueous Solutions using Horiba OCMA-550 (WS2-1804-PRO-00156), or equivalent.	Laboratory and/or calibration records confirm PW sampling equipment and laboratory analysis equipment is routinely calibrated in accordance with WHS Procedure WS2-1804-PRO-00156), or equivalent.
	Operating manual and procedures During normal operations, PW Operating Manual tiered response and High OIW Content Procedure is implemented if: • manual laboratory sample >30 mg/L TPH • analyser trending indicates potential exceedance of TPH as defined in High OIW Content Procedure	Records confirm PW Operating Manual tiered response and PW – High OIW Content Procedure is implemented if required
	Operating manual and procedures During well clean-up campaigns, response actions/steps are implemented in accordance with the procedure if: • manual laboratory sample of >100 mg/L • trending indicates potential exceedance of TPH	Records confirm that procedure response actions are implemented if required
	CMMS PW treatment system is operational and maintained in accordance with the CMMS.	CMMS records demonstrate maintenance of PW treatment system
	CMMS Critical equipment supporting the smart analyser**** are maintained in accordance with CMMS	Laboratory and/or calibration records
	CMS Personnel taking samples and analysing samples are competent to ABU – 1645 Produced Water Treatment System – Comprehensive Review and CAPL Laboratory Manual standards.	Records demonstrate personnel taking samples and analysing samples have the required competency.

Notes:

** PC95 species protection criteria has been adopted from ANZG (Ref. 20), where available*

*** With the exception of well clean-ups*

**** Laboratory sampling frequency may be revised in line with the process outline in Section 9.4.1.1.8.*

***** Where 'critical equipment supporting the smart analyser' are those that provide features as input into the predictive analysis algorithm of the smart analyser.*

7.2.7 Planned discharges—Wastewater

7.2.7.1 Seawater system and cooling water

To prevent marine growth, sodium hypochlorite is continuously dosed in the platform seawater system lift pumps so that the whole seawater system is chlorinated, resulting in the discharge of cooling water with slight traces of residual chlorine. Hypochlorite is also intermittently injected into other caissons that are in contact with seawater (for ~15 minutes, once or twice a day). The discharge temperature will be around 30-40 °C but may reach 50 °C on occasion.

The continuous dosing of the seawater lift pumps and the subsequent continuous CW discharge is the greatest volume of discharge and therefore is the focus of this assessment. Based upon the operation of the platform over the past four years, CW discharges have averaged a volume in the order of ~80,000–1,000,000 m^3/day. The continuous injection of hypochlorite into the seawater system results in the residual chlorine concentration discharged at 0–0.2 ppm via the CW caisson.

Modelling Results

Cooling Water discharge modelling has been conducted to quantify and assess the extent of the strongly buoyant discharge plume. The following modelling has occurred:

- during the development of the EIS (Ref. 57).
- optimised during FEED (Ref. 466)
- refined in 2016 (Ref. 185)
- validation of the model in 2018/19 (Ref. 187).

The EIS and FEED phase models were based on CORMIX (near field) and CMS-Flow (far field) while the refined ongoing modelling uses CORMIX (near field) and MIKE 3FM (far field). The results show the size, concentration of residual chlorine and location of the plume and where the plume temperatures approach ambient conditions.

Modelling predicts that for the maximum CW discharge volume, the maximum extent for plumes to dilute to the ANZG WQ criteria of 3 ppb for chlorine extends ~600 m from the platform (Ref. 466).

The models predict that the CW plume is strongly buoyant and will not be in contact with the seabed prior to extensive dilution (Ref. 57; Ref. 466; Ref. 185). The residual chlorine in the plume dilutes more than the 67 times required to meet the ANZG management guidelines before the plume first reaches the sea surface, then mixes further horizontally and vertically before potentially contacting the seabed in the far field.

The CW plume temperatures are predicted to be close to ambient conditions well within the near-field, typically within 3 °C of ambient within ~250 m from the platform (Ref. 57; Ref. 19). CORMIX predicts dilutions of 1000 to 10 000 (which is within 0.05 °C of ambient temperature) within the boundary zone and without contact of the seabed in the nearfield (Ref. 466; Ref. 185).

Model verification

In November 2018, a comprehensive field campaign (Ref. 187; Ref. 406) was executed to confirm that that the required dilutions with regard to environmental guidelines were being achieved, and to validate model predictions. The campaign

involved controlled injection of Rhodamine WT (RWT) dye into CW and PW discharges from the platform, in conjunction with intensive in situ measurements of the resulting 'spiked' plumes. Field measurements involved sample retrieval and fluorometry directly from the vessel, fluorometry and sample retrieval from an ROV despatched to traverse the plume, and sensor measurements by ocean glider and an unmanned aerial vehicle to ascertain marine conditions, map plume geometry, and quantify dilutions associated with the discharge plumes. An ADCP and temperature string were deployed on a fixed mooring for the duration of the campaign.

As a result of the open caisson design, flowrate and free-falling discharge from platform level within the caisson, the CW plume was observed to contain a very high content of entrained air. This air content, which was not considered in previous CW plume assessments, clearly dominates the near-field behaviour of the waste stream until the air is lost to the atmosphere (Ref. 187).

The results of the field campaign strongly suggest that nearfield mixing was drastically underestimated given the presence of entrained air (i.e. model predictions are highly conservative). Consequently, the monitoring indicates that the initial discharge zone of 850 m is conservative and remains appropriate for continued operations of the facility.

7.2.7.2 Drainage

The discharge from open drains is intermittent, with the oil-water treatment system designed to meet a discharge concentration of 15 mg/L or less. Discharge rates will vary significantly according to the sources of open drains effluents, including firewater and rain/stormwater. Drainage water can contain traces of emulsified oil and grease, diesel, hydraulic oil, lubricants, cleaning fluids, and similar contaminants, and low concentrations of sodium hypochlorite will be present from the routine caisson dosing and occasional draining of systems (such as tempered water, heating, ventilation and air conditioning (HVAC), firewater main and potable water).

During platform maintenance, breaking containment of vessels, opening lines, high-pressure cleaning, and topping up and changing fluids may be performed. During these processes, most fluids will be captured in drip trays or the drainage system and passed through the oil-water treatment system; however, occasionally, depending on the location of the equipment on the topsides, discharges may bypass the drainage system (e.g. firewater main).

Fire protection system testing is mandatory for safety requirements and will result in ~5 m^3 of foam discharging through the grating on the topsides several times per year. If the active fire protection system is used, treated sea water with low concentrations of hypochlorite may be released to the ocean.

7.2.7.3 Sewage, greywater, brine and food

Sewage discharge is ~30 m^3/day during normal operations workforce rates (POB 96), and 33–52 m^3/day during occasional and short-term peak workforce periods. Due to the low discharge rate, the sewage and greywater discharge is predicted by modelling to be highly diluted within the near-field, with no far-field impact (Ref. 57). The kitchen waste system includes a macerator, which discharges to the ocean through a dedicated discharge pipe. Brine is discharged as wastewater from the reverse osmosis process (potable and demineralised water), and is predicted to be ~6–15 m^3/hour with salinity levels ~31% higher than the receiving

open-ocean environment. Local wave, tide, and wind action enhance the brine plume diffusion and mixing immediately on discharge and the brine plume will be rapidly diluted and dispersed by ambient currents (Ref. 57). At a discharge depth of 40 m, the sewage effluent was buoyant, typically diluted by a factor of ~2000 by the time it reached the surface of the water column (Ref. 57) and still further diluted before potentially remixing vertically in the column and contacting the seabed.

For greywater and brine, based on the forecast biodegradability, depth of discharges, and exposure of the discharges to open ocean currents, no detectable impacts to background water and sediment quality are forecast (Ref. 57) and are therefore not discussed further below. No detectable impacts to marine sediment quality are forecast for any these discharges (Ref. 57).

7.2.7.4 Risk assessment

Source

Activities identified as having the potential to result in planned discharges are:

- start-up and operation of the platform.

The types of planned discharges include CW, drainage, fire-fighting foam, sewage, greywater, food wastes, brine, and potable water.

Potential impacts and risks

Impacts	C	Risks	C
Planned discharges from the platform may result in: • localised and temporary reduction in water quality.	5	A change to ambient water quality may result in: • indirect impacts to fauna arising from chemical toxicity • changes to predator / prey dynamics	6

Consequence evaluation

Localised and temporary reduction to water quality

To understand the extent of exposure, CW has been selected as a case study to enable a conservative assessment to be undertaken given it comprises the largest volume and is a continuous discharge. As detailed previously, infield monitoring has validated that the extent to which water quality may be affected by these discharges is no more than 850 m.

Given that the platform is located within a highly dispersive, open ocean location, these planned discharges are subject to extensive and rapid dilution by open ocean currents and tides (Ref. 19). In-field monitoring has validated the assumption that they dilute rapidly and do not persist long in the marine environment. On the basis that these discharges will result in a localized change to the environment with impacts that are short in duration, CAPL has ranked the consequence associated this impact as Minor (5).

Potential chemical toxicity

Changes to ambient water quality associated with various planned releases may occur up to ~850 m from the platform. The values and sensitivities with the potential to be exposed to toxicity effects within this area include:

- Whale Sharks (foraging)
- Flatback Turtle (internesting)
- Ridgeline habitat and associated communities.

Infield monitoring (Ref. 187) confirmed that due to entrained air, the plume is strongly buoyant, thus exposure to benthic habitats such as the ridgeline habitat will not occur. Consequently, this has not been considered further.

According to the *Marine Bioregional Plan for the North-West Marine Region* (Ref. 216), nutrient pollution is only listed as a pressure for turtles, but potential impacts are limited to discharges nearshore. Additionally, the *Recovery Plan for Marine Turtles in Australia* (Ref. 129) lists chemical discharges as a threat. Although the discharge plume intersects the Flatback Turtle internesting

BIA, Whittock et. al. (Ref. 483) reported that Flatback Turtles preference habitats within proximity of the coast and at relatively shallow depths during the internesting period. Specifically, during the study, a maximum distance from the nearest coast and maximum water depth of 27.8 km and <44 m respectively was recorded, with the mean maximum distance away from the nearest coast and mean water depth being less than 6.1 km and <10 m respectively (Ref. 483). Given that the platform is located ~50 km from the nearest coast, even though the Flatback turtle internesting area may be exposed to changes in water quality, due to the distance offshore, these discharges are not expected to result in any significant impacts.

The *Blue Whale Recovery Plan* (Ref. 200) states that marine pollution can have a variety of possible consequences for Blue Whales at an individual and population level, or indirectly through harming their prey or the ecosystem. Marine pollution is not listed as a threat within the *Conservation Advice (Rhincodon typus) Whale Shark* (Ref. 454).

As both cetacean species and whale sharks are highly mobile, they are not expected to be exposed to the discharge plume for a prolonged period of time thus any impacts are expected to be limited.

Given that all the discharges are positively buoyant, and as they are all discharged in water depths >35 m, on release they will rise through the water column and subsequently dilute and disperse quickly. The platform is located within an open water dispersive environment thus discharges are subject to rapid dilution and dispersion. Monitoring has verified that impacts are limited in extent within close proximity of the discharge location and consequently, prolonged exposure to transient marine fauna species are not expected.

Given the rapid dilution and dispersion conditions, and the transient nature of marine fauna, bioaccumulation in the receiving environment and sublethal impacts are expected to be limited. Consequently, the release of waste water discharges are expected to result in a limited environmental impact, and the consequence level was determined as Incidental (6).

Changes to predator/prey dynamics

At a discharge depth of >35 m, the sewage effluent is buoyant, and the expected low volumes of these discharges are expected to dilute and dissipate to surface waters above the discharge point of the platform. Effects on environmental receptors along the food chain – fish, reptiles, birds, and cetaceans – are not expected beyond the immediate vicinity of the discharges in deep open waters (Ref. 357). Given that sewage discharges are positively buoyant, only pelagic species are likely to be impacted with no exposures to benthic habitat expected.

The values and sensitivities with the potential to be affected by changes in predator/prey dynamics within 850 m of the platform include:

- Whale sharks (foraging)
- Lesser Crested Tern, Wedge-tailed Shearwater (breeding).

Studies into the effects of nutrient enrichment from offshore sewage discharges indicate that the influence of nutrients in open marine areas is much less significant than that experienced in enclosed areas (Ref. 336) and suggest that zooplankton composition and distribution in areas associated with sewage dumping grounds are not affected. However, if any changes in phytoplankton or zooplankton abundance and composition occur, they are expected to be localised, typically returning to background conditions within tens to a few hundred metres of the discharge location (Ref. 3; Ref. 29; Ref. 383).

Given the distance from shore, these incidental discharges are not expected to influence foraging behaviours of seabirds (specifically the Wedge-tailed Shearwater), and thus are not considered further.

As described above, plankton communities are not affected by sewage discharges, but if they are, such effects would be highly localised (expected to return to background conditions within tens to a few hundred metres of the discharge location). Consequently, impacts to Whale Shark foraging behaviours are not expected, and thus are not considered further.

Although fish have the potential to be attracted to these discharges, any attraction and consequent change to predator/prey dynamics is expected to be limited to the area of the release and thus is expected to result in localised feeding behavioural changes to fish species. Given the rapid dilution of the discharged material, such behavioural changes will be temporary in nature and not expected to significantly alter existing predator/prey dynamics.

Overall, a change in water quality as a result of sewage or food discharges are unlikely to cause a change in behaviour of marine fauna at a measurable level and will not result in a change in the viability of the population or ecosystem

As water quality changes are predicted to be rapidly dispersed, and the discharges are not expected to adversely affect marine habitats and fauna, any increased predation is not expected

to result in more than a limited environmental impact. CAPL has thus ranked the potential consequence as Incidental (6).
ALARP decision context justification
Planned discharges from offshore facilities are commonplace nationally and internationally. The control measures to manage the risk associated with these planned discharges are well defined and are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL. During stakeholder consultation, no objections or claims were raised regarding vessel discharges arising from the activity. The impacts associated with these discharges are lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.
Good practice control measures and source

Control measure	Source
Hypochlorite dosing	The hypochlorite dosing package is commissioned, tested and calibrated during initial start-up. The seawater system has been designed to meet the continuous hypochlorite dosing levels that ensure the entire system achieves a residual chlorine content of up to 0.2 ppm discharged through the CW caisson.
CMMS	Through ongoing maintenance, the dosing package and seawater system will be maintained, thereby ensuring the system is operating at optimal capacity and reducing the risk of elevated residual chlorine levels.
	The drainage and oily water system will be maintained, thus ensuring the system is operating at optimal capacity to treat oily water.
Oil-water treatment system	Potential oil contaminated streams from the platform drainage system are treated through the oil-water treatment system, prior to discharge at or below 15 mg/L, and is verified through laboratory sampling and analysis. The platform drainage system design ensures potentially oil-contaminated streams will be directed to the slops tank, where they will undergo coarse OIW separation, and then further processed in the slops water secondary treatment package before discharge through the open drains caisson. Treated water from the package is discharged to the open drains caisson while the recovered oil is returned to the oil compartment of the slops tank. The Product Design Specifications are to achieve <15 mg/L in the discharged treated water (Ref. 67; Ref. 109). The design of the open drains system is based on an optimisation between providing sufficient capture, storage, and treatment of cyclonic rainfall and the size and weight of such structural storage. The system is designed to meet 15 mg/L, which is standard in the marine and oil and gas industry. Commissioning tests and routine laboratory sampling verifies the adequacy of the treatment system to confirm that it achieves 15 mg/L. The secondary treatment package vessel includes differential pressure and level alarms which can indicate poor separation of oil. These alarms trigger response actions by platform personnel in accordance with the Slops Water Secondary Treatment Package section of the Hazardous and Non Hazardous Drains Systems Operating Manual Volume 1 – Process and Equipment Description (Ref. 67). The system is tested and calibrated if the response to the alarm indicates the oily water treatment is not achieving 15 ppm.
Hazardous materials selection process	As part of the hazardous materials selection process, hazardous materials that will be discharged to the environment will undergo a detailed environmental assessment, as per CAPL's *Hazardous Materials Management Procedure* (Ref. 76).

Sewage treatment system	Sewage will be macerated through the sewage treatment system prior to discharge. Macerating sewage is standard industry practice, ensuring the substance disperses in the receiving environment with minimal effects to water quality. The sewage treatment plant and food waste macerator is maintained. Regular maintenance ensures the system is operating and functioning as intended.	
Food waste discharge	Food waste macerated and discharged at a particle size ≤25 mm is standard marine industry practice; this size ensures that the discharges are rapidly diluted and dispersed by ambient ocean currents (Ref. 57) with minimal effects to water quality.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and Risk Level Summary		
Likelihood	With the numerous controls in place, the expected volumes, concentrations, and types of fluids discharged, rapid dispersion, and the predicted limited spatial extent of water quality changes, it is considered Remote (5) that these discharges would result in any impact to the ecological function of the particular values and sensitivities present within the OA.	
Risk Level	Very low (10)	
Determination of Acceptability		
Principles of ESD	The potential impacts and risks associated with this aspect are spatially limited to an area around the platform, which is not considered as having the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered for this aspect include: • *Marine Bioregional Plan for the North-West Marine Region* (Ref. 216) • *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 200) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129).	
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • *Hazardous Materials Management Procedure* (Ref. 76). • *Hazardous and Non Hazardous Drains Systems Operating Manual Volume 1 – Process and Equipment Description* (Ref. 67).	
External context	No objections or claims were raised regarding wastewater discharges arising from the platform.	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	

Environmental performance outcome	Performance standard / Control measure	Measurement criteria
No impacts to marine habitats or marine fauna outside of the OA from platform discharges during petroleum activities	**Hypochlorite dosing** The seawater system (continuous dosing) meets the residual chlorine discharge limit of 0.2 ppm for CW and ongoing monitoring is performed in accordance with Table 9-14	Laboratory (LIMS) records demonstrate the seawater system CW discharge meets the residual chlorine limit of 0.2 ppm for continuous dosing and ongoing monitoring is in accordance with Table 9-14
	CMMS Maintenance of the dosing package and seawater system is in accordance with the CMMS	CMMS records of the dosing package and seawater system
	CMMS The oil-water treatment system is maintained in accordance with the CMMS	CMMS records show maintenance of the oil-water treatment system
	Oil-water treatment system Oily water is treated through the oil-water treatment system to meet the 15 mg/L discharge concentration	Laboratory records of weekly analyses (when discharging) show the oil-water treatment system meets the 15 mg/L discharge concentration
	Oil-water treatment system Response to alarms (for the Slops Water Secondary Treatment Package) are in accordance with *Hazardous and Non Hazardous Drains Systems Operating Manual Volume 1 – Process and Equipment Description*	Records show response to alarms (for the Slops Water Secondary Treatment Package) in accordance with *Hazardous and Non Hazardous Drains Systems Operating Manual Volume 1 – Process and Equipment Description*
	Hazardous materials selection process Fluids planned for discharge are subject to the hazardous materials selection process as per the CAPL *Hazardous Materials Management Procedure*	Hazardous materials selection process assessment records (or similar)
	Sewage treatment system Sewage is discharged after being macerated through the sewage treatment plant during routine operations	Records verify sewage is discharged after maceration through the sewage treatment plant during routine operations
	Sewage treatment system The sewage treatment system and food waste system are maintained	Inspection records (or equivalent) demonstrate maintenance of the sewage treatment system and food waste system
	Sewage treatment system Shut-downs and alarms are investigated and critical macerator operability issues rectified prior to restart of equipment	Inspection records (or equivalent) verify operability issues rectified

	Food waste discharge Discharged food waste is macerated through the food waste system to particle sizes ≤25 mm during routine operations	Records verify that food discharged is macerated to ≤25 mm when discharged during routine operations

7.2.8 Unplanned release—Waste

Source

Activities identified as having the potential to result in the unplanned release of waste are:

- start-up and operation of the platform.

Because waste is generated on board the platform, inappropriate management and storage has the potential to result in a release to the environment.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Unplanned release of waste to the environment may result in: • marine pollution resulting in entanglement or injury of marine fauna	6

Consequence Evaluation

If hazardous or non-hazardous waste is lost overboard, the extent of exposure to the environment is limited.

Marine fauna most at risk from marine pollution include marine reptiles and seabirds, through ingestion or entanglement (Ref. 129; Ref. 156). Ingestion or entanglement has the potential to limit feeding or foraging behaviours and thus can result in marine fauna injury or death. Although marine debris is identified as being of concern to marine reptile species under the *North-west Marine Bioregional Plan* (Ref. 216), the risk is associated with 'land-sourced plastic garbage, fishing gear from recreational and commercial fishing abandoned into the sea, and ship-sourced, solid non-biodegradable floating materials disposed of at sea'. This type of waste is not associated with the activities described under this EP and given the restricted exposures and the limited quantity of waste with the potential to cause marine pollution that is expected to be generated from petroleum activities, it is expected that any impacts from marine pollution would result in limited impacts to individuals. Thus, CAPL ranked this consequence as Incidental (6).

ALARP decision context justification

Offshore facility operations, and the subsequent management of waste, are commonplace and well-practiced activities within the industry.

The control measures to manage the risk associated with an accidental release of waste are well defined via legislative requirements that are considered standard industry practice. There is a good understanding of the release pathways, and the control measures required to manage these events are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding waste management arising from the activity.

An unplanned release of waste is a lower-order risk in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Waste management	Waste management strategies are in place for platform operations, and are aimed at preventing both accidental pollution, and pollution from routine operations. These waste management strategies describe various requirements that are to be applied when managing waste offshore; specifically, that lidded bins are available for use in open areas of the platform, and that records are maintained of waste transferred.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
N/A	N/A	N/A

Likelihood and risk level summary

Likelihood	Marine pollution arising from mismanaged waste offshore has occurred previously in the industry but is not expected to occur during these activities, given the control measures in place. As such, the likelihood of incidental consequences to values and sensitivities from an unplanned release of waste is considered Remote (5).	
Risk Level	Very low (10)	
Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect is limited to individuals and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no additional evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered relevant for this aspect include: • *Marine Bioregional Plan for the North-West Marine Region* (Ref. 216) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129).	
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.	
External context	No objections or claims were raised regarding waste management arising from the platform.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No uncontrolled release of waste to the environment during petroleum activities	**Waste management** Platform waste is managed by: • lidded bins are provided in open areas of the platform where waste has a risk of being blown to the ocean (e.g. general waste, loose plastic) • records of waste transferred from the platform will be maintained	Records confirm that platform waste management is being implemented, specifically including presence of lidded bins and waste transfer records

7.2.9 Unplanned release—Loss of containment

Source

Activities identified as having the potential to result in a minor LOC event:

- start-up and operation of the platform.

Based on the activities described in this EP, the following potential minor LOC scenarios were identified:

- corrosion, mechanical failure/damage, or fire/explosion during hydrocarbon processing, resulting in a loss of production fluids[1]
- mechanical failure/damage of platform infrastructure, resulting in the loss of MEG[2]
- mechanical failure/damage, or human error during bunkering, resulting in loss of various fluids including diesel, MEG, or TEG[3]
- mechanical failure/damage during crane activities, resulting in loss of hydraulic fluids[4]
- mechanical failure/damage, or human error during storage and handling, resulting in loss of various fluids including diesel, chemicals, or waste[5].

[1] A hydrocarbon processing LOC may result in the release of production fluids, ~<50 m^3. This maximum credible volume is based on the largest individual condensate inventories, calculated in the platform Safety Case release scenarios (Ref. 116).

The diesel storage tank has a capacity of 135 m^3; however, the location and design of this tank is such that a LOC scenario was deemed as non-credible during the risk assessment process.

Note: as the platform is not a floating facility but is resting on the seabed, a topside LOC event leading to an explosion would not result in structural collapse/integrity failure (Ref. 116). Instead, an explosion on the topsides could result in individual production fluid inventories being released to the ocean. It is expected that maximum credible volumes associated with this event are ~<50 m^3 (Ref. 116).

[2] A vessel collision with the platform legs may result in the release of MEG from the storage tanks (~<60 m^3 of MEG over 4 hours).

A study was conducted to evaluate the ship collision hazards to the platform, with the overall objective to determine which vessels have sufficient impact energy to cause progressive collapse of the facility. It was concluded that for all vessels associated with these activities, drift-off and drive-off collisions have insufficient impact energies to cause platform collapse (Ref. 116). Furthermore, the above-deck height of the vessels is low enough that they would clear the bottom of the deck, or only cause minor damage to the topsides structure. It was further concluded that a supply vessel collision would result in minor structural damage due to insufficient impact energy (Ref. 116).

[3] Platform bunkering – single point failure may result in the release of diesel, MEG, TEG (~10 m^3 over 15 minutes). This volume was identified as 15 minutes of transfer at the full pumping rate as per AMSA Guidance on oil spill planning (Ref. 15). Diesel has the highest potential impact to receptors and therefore is the worst-case release for this group of spill scenarios.

[4] Hydraulic systems – single point failure (~<10 m^3 of hydraulic fluids). This volume is based on the volumes of hydraulic fluids stored in the crane hydraulic system.

[5] Bulk storage and handling on the topsides single point failure may result in substances reaching the marine environment (~<10 m^3).

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Unplanned release of hazardous material to the marine environment may result in: • indirect impacts to fauna arising from chemical toxicity	5

Consequence evaluation

The largest platform LOC event is estimated to be ~50–60 m^3 of condensate or MEG, and therefore these scenarios has been used as the basis of this consequence evaluation. A surface release of ~50–60 m^3 of condensate or MEG would be expected to temporarily change the water quality within the immediate vicinity of the release.

The aquatic toxicity of MEG is very low; and is on the OSPAR list of substances that are considered to pose little or no risk to the environment once released (PLONOR), and is not expected to result in adverse impacts to habitats or fauna

Once on the surface, condensate will rapidly evaporate with only a small proportion dispersing in the surface layers of the water column under moderate winds and mixing conditions (Section 8.1.2.1).

The values and sensitivities proximal to the platform that have the potential to be exposed to decreased water quality from an unplanned surface LOC release include:

- Flatback Turtle (internesting buffer)
- Whale Shark (foraging).

Based on the nature of these unplanned releases, which are non-continuous and expected to occur in a location where no specific sedentary behaviours for values and sensitivities have been identified, the extent and severity of any potential impact is expected to be limited.

Given the nature of unplanned releases covered under this EP and the transient nature of identified values and sensitivities, fauna would need to pass directly through the plume almost immediately upon release to be impacted.

Any potential impact from such an event is expected to be limited, thus the consequence level was determined as Minor (5).

ALARP decision context justification

Operation of offshore facilities is commonplace and well-practised both nationally and internationally. The control measures to manage the risk associated with these unplanned discharges are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding planned discharges from subsea operations arising from the activity.

The impacts associated with these discharges are lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
CMMS	The diesel, MEG, and TEG tanks have high-level alarms that trigger an audible alarm to stop bunkering. This ensures operators are made aware of overfilling, and reduces the potential for spills. Routine testing ensures the alarms are functioning correctly.
	Ongoing maintenance of the platform navigation equipment ensures equipment is operational and provides situational awareness of maritime traffic movements, thereby reducing the risk of interference with other marine users. The equipment standards of performance are included in the Computerised Maintenance Management System (CMMS). Maintenance activities are managed through the CMMS (described in Section 9.3.2.3), which is used as the main asset and inventory management system within CAPL for performing and tracking maintenance activities.
	Platform bunkering hoses, hydraulic hoses, chemical and diesel storage areas, cranes, and hydrocarbon processing systems are maintained. The spill scenarios assessment determined that spills can occur from bunkering hoses, hydraulic hoses, chemical and diesel storage areas, dropped objects from cranes, and hydrocarbon processing systems. Therefore, regular inspections and maintenance ensures the mechanical and structural integrity of these systems is maintained. This reduces the risk of mechanical failure that results in spills associated with the processing, storage, handling, and transfer of liquids.
Spill kits and drip trays	Spill kits will be provided on the platform to allow personnel to respond to minor leaks and spills and reduce the risk of spills/leaks reaching the ocean. Drip trays are available to capture drips and leaks, where safe to do so.
Control of Work (CoW) process	CAPL's CoW process (Ref. 52) ensures that workplace safety and health hazards are assessed and managed. The work authorisation system is part of this process and includes simultaneous operations (SIMOPS) and

	hazard analysis. Where required under the CoW process, a SIMOPS Plan will be developed to identify and manage hazards arising from the activity and other CAPL planned petroleum activities when occurring within the same area (refer to Table 7-2).
Source control	The platform pipework includes numerous isolation valves including the RESDV, to ensure any LOC is minimised to isolated areas (as detailed in the relevant Safety Case [Ref. 115]). Testing and commissioning these valves prior to hydrocarbon introduction, ensures they are functioning correctly and capable of isolating fluids in the processing pipework, therefore reducing the risk of LOC scenarios. Source control, such as using the platform isolation valves, is an initial response action that can limit the volume released, thus minimising environmental impacts. CAPL has developed EOPs (1060 Platform – Response To Emergency Shutdown (ESD1) Ref. 118) for the operation of the platform that provide guidance to Operations personnel to detect, isolate, and stabilise non-routine events.
Marine Standard	The *Marine Standard* Non Tankers: Corporate OE Standard (Ref. 100) ensures that various legislative requirements and CAPL standards are met. Specifically, for vessels and crew undertaking bunkering and transfers, this includes: • a dedicated radio channel is agreed between vessel and receiving facility before commencing activity • checklists are completed prior to transfers.

Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A

Likelihood and risk level summary	
Likelihood	The various prevention and mitigation controls outlined above ensure the likelihood of platform operational spills are minimised, with impacts to marine fauna and habitats ranked as Unlikely (4).
Risk level	Low (8)
Determination of acceptability	
Principles of ESD	The potential impact associated with this aspect would be short term, apply to some individuals, and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no additional evaluation against the Principles of ESD is required.
Relevant environmental legislation and other requirements	No legislation or other requirements were considered relevant to this aspect.
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • *Marine Standard* Non Tankers: Corporate OE Standard (Ref. 100) • EOPs (Ref. 118).
External context	No objections or claims regarding on-platform spill events were raised for the activity.
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not

	inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control Measure**	**Measurement criteria**
No unplanned release of hydrocarbons / hazardous materials to the environment during petroleum activities	**CMMS** High-level alarms of platform storage tanks are operational and routinely tested in accordance with the CMMS	CMMS records show high-level alarms are operational and tested
	CMMS Platform radar, navigational lighting and audio navigational equipment is maintained in accordance with the CMMS	CMMS records show platform radar, navigational lighting and audio navigational equipment is maintained
	CMMS Inspection and maintenance of platform hydraulic hoses, storage tanks, cranes, and hydrocarbon processing systems are in accordance with the CMMS	Records show inspection and maintenance of platform hydraulic hoses, storage tanks, cranes, and hydrocarbon processing systems
	CoW process Where required, CAPL will develop and implement SIMOPS Plan(s) to manage IMR activities that occur within the OA.	Records indicate that the CoW process has been applied and where required, a SIMOPS Plan has been developed and in place before the activity commences
	Marine Standard Prior to commencing bunkering or transfers between the platform and a vessel: • a dedicated radio channel is agreed between vessel and platform • checklists are completed	Records confirm that bunkering or transfers are undertaken in accordance with the Marine Standard.
Reduce the risk of impacts to the environment from the unplanned release of hydrocarbons / hazardous materials during petroleum activities	**Spill kits and drip trays** Spill kits and drip trays are available on the platform	Inspection records confirm spill kits and drip trays are available on the platform
	Source control Isolation steps of the source control/isolation procedures (are implemented if a release is detected from the platform hydrocarbon processing systems	Records demonstrate relevant components (isolation steps) of the source control procedures are implemented if a release is detected from the platform hydrocarbon processing systems

7.3 Inspection, Maintenance, and Repairs

7.3.1 Subsea IMR

7.3.1.1 Seabed disturbance

Source

Activities identified as having the potential to result in seabed disturbance are:

- subsea IMR operations within the OA.

Potential impacts and risks

Impacts	C	Risks	C
Seabed disturbance may result in: • alternation of benthic communities and habitats.	5	Seabed disturbance may result in: • changes to tangible cultural heritage values	5

Consequence evaluation

Alternation of benthic communities and habitats

As benthic habitats upstream of the platform mostly comprise unvegetated, soft, and unconsolidated sediments with a low but varying degree of benthic invertebrate habitation (Section 4.3.3.4.1), seabed disturbance from IMR activities conducted on infrastructure upstream of the platform are not considered to pose any credible hazards to benthic habitats and communities. Consequently, benthic habitats downstream of the platform will form the focus of this evaluation.

Subsea IMR activities are expected to result in disturbance to the seabed within close proximity of subsea infrastructure. This type of activity is targeted to the specific area above or adjacent to the infrastructure within the OA, typically resulting in only a small area being affected. The largest area of seabed disturbance predicted to occur from IMR activities is associated with a major pipeline repair, which could result in ~800 m^2 of seabed disturbance (Section 3.4.1). This indicative seabed disturbance area represents <1% of the OA.

The particular values and sensitivities within the OA with the potential to be impacted by seabed disturbance include:

- continental slope demersal fish communities (KEF)
- ancient coastline at 125 m depth contour (KEF)
- Montebello AMP
- ridgeline habitat and associated communities.

Although these values and sensitivities have been identified as having the potential to be impacted from IMR activities, any planned disturbance will be in close proximity of existing infrastructure. As this area has been historically disturbed, any additional disturbance is expected to have limited environmental impact.

Given the nature of the receiving environment within the OA, performing IMR activities is not expected to affect ecosystem function or connectivity of communities. As such, CAPL has ranked the consequence as Minor (5).

Changes to tangible cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6). A cluster of recorded protected UCH[48] sites (shipwrecks >75 years old) occur at the outer boundary of the OA (Section 4.6.2), in ~180–190 m water depths and ~5 km from the Julimar–Brunello trunkline (Figure 4-45). No other UCH sites—including First Nations UCH—were identified within the OA. Given the distance to the recorded UCH sites and that subsea IMR activities are expected to result in seabed disturbance within close proximity to existing subsea infrastructure, disturbance to UCH sites is not anticipated. Therefore, no impacts to known protected seabed-based UCH (e.g. shipwrecks or archaeology), including tangible First Nations UCH, are expected.

[48] Under Section 15 of the UCH Act, UCH is defined as “any trace of human existence that has a cultural, historical, or archaeological character, and is located under water”.

Given the known sea level history, the OA (i.e. areas in water depths <125 m) would have been emergent land during the extended history of First Nations occupation of Australia. At the time of writing, CAPL understands through consultation with the relevant First Nations people and/or representative bodies that there are no known artefacts or specific sites of cultural value associated with the seabed within the OA. As such, seabed disturbance within the OA is not expected to result in significant adverse impacts to tangible heritage features.

As identified from literature and/or consultation (Section 4.3.6.2.1), Sea Country is a value for First Nations people. It is understood that the term 'Country' refers to more than just a geographical area, and includes values, places, resources, stories, and cultural obligations associated with that geographical area (Ref. 435; Ref. 434). One of the specific tangible values of Sea Country identified through consultation was the ocean (Table 4-18)—consequence evaluations to related receptors (i.e. marine environmental quality, benthic communities and habitats) are provided above.

No impact pathway to a change in access to Country from planned seabed disturbance within the OA is anticipated. The consequence evaluation to benthic communities and habitats is provided above and was assessed as resulting in localised and minor environmental impacts. Further, as described in the above evaluation, changes to the benthic habitat within the disturbance footprint associated with seabed infrastructure is not expected to affect ecosystem function or connectivity.

As such, CAPL has ranked the consequence for cultural values as Minor (5).

Given the nature of the receiving environment within the OA, performing IMR activities is not expected to affect ecosystem function or connectivity of communities. As such, CAPL has ranked the consequence as Minor (5).

ALARP decision context justification

Seabed disturbance from IMR activities is commonplace; the activities causing this aspect are practised nationally and internationally. The control measures to manage the impacts associated with seabed disturbance are well understood and implemented by the industry.

During stakeholder consultation, no objections or claims were raised regarding seabed disturbance arising from the activity.

The impacts associated with seabed disturbance are considered lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
IM Plans	Inspections provide assurance that assets are in good condition and proactively identify maintenance or repair activities that may be required. The type and frequency of inspections of the hydrocarbon system will be undertaken in accordance with the IM Plans (Ref. 493, Ref. 103). Inspection and monitoring results are assessed against acceptance criteria to allow early identification and management of potential anomalies through engineering assessment, maintenance, and repairs to ensure the integrity of the hydrocarbon system and prevent a LOC. Inspections are tracked via the CMMS.
IMR work procedures	Activity specific work procedures are developed and address Hazard Identification and Risk Assessment (HIRA) findings, including any additional controls identified for implementation.
Activity-specific HIRA	The HIRA will include HSE Specialist participation to identify and assess potential environmental impacts and risks associated with the specific maintenance or repair campaign proposed. The HIRA will consider relevant information, which may include: • proximity to potentially sensitive environmental receptors (e.g. ENV001, ENV002 and ENV003) • other known activities and/or impacts that have occurred at that location • material minimisation • alternative materials • alternative execution methodologies

	• learnings from previous comparable IMR activities/campaigns. Where the HIRA identifies that risks and impacts are potentially greater than those assessed in this EP, the management of change process will be triggered (Section 9.3.2.2).
Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies)	In addition to consultation undertaken during the preparation of this EP (as required by regulation 25 of the OPGGS(E)R, and described in Section 6), as part of ongoing consultation (as required by regulation 22(15) of the OPGGS(E)R, and described in Section 9.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 9-5) as well as broader engagement and relationship building (Section 9.3.4.3). Ongoing consultation and relationship building with First Nations people and/or representative bodies provides a continual improvement opportunity to support CAPLs understanding of cultural values or features that may be present within their areas of operation, and subsequently allow potential impacts and risks to be managed to an ALARP and acceptable level.
First Nations UCH	As described in Section 4.6.2, no known First Nations artefacts or specific sites of cultural value associated with the seabed within the OA. CAPL acknowledge that the identification of First Nations UCH is an area of uncertainty, and as such, CAPL is committed to implementing an adaptive management process to ensure that impacts and risks associated with this receptor are continually reduced to ALARP and managed to acceptable levels. To address the uncertainty, the following adaptive management process will be implemented: • implement ongoing consultation with First Nations people and/or representative bodies (as described in the above control measure). • if ongoing consultation identifies the presence of First Nations UCH or potential UCH is identified during the petroleum activity, then CAPL will undertake an MoC evaluation that will include a consideration of whether other data (e.g. archaeological survey) or additional control measures (e.g. use of buffers around underwater artefacts) are required to ensure that impacts and risks to UCH are being reduced to ALARP and managed to an acceptable level.
UCH Procedure	The *Inadvertent Underwater Cultural Heritage Discovery Procedure* (UCH Procedure) (Ref. 99) has been developed in alignment with the Assessing and Managing Impacts to Underwater Cultural Heritage in Australian Waters guideline (Ref. 161). The UCH Procedure will be implemented where there are activities interacting with the seabed with the risk of disturbing unlocated UCH. The UCH Procedure outlines how inadvertent discoveries of UCH (including First Nations UCH) are identified on site and responded to through adequate conservation and management actions. The UCH Procedure identifies actions to be taken should potential UCH be identified within the OA.

Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A

Likelihood and risk level summary	
Likelihood	Due to the limited area of seabed disturbance and the pre-disturbed nature of the OA, and with the control measures in place,

	the likelihood of impacts to cultural values from seabed disturbance is Rare (6).	
Risk level	Very low (10)	
Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect is limited to localised short-term effects that are not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered for this aspect include: • Marine Bioregional Plan for the North-West Marine Region (Ref. 216)	
Internal context	These CAPL environmental performance standards / procedures were deemed relevant for this aspect: • IM Plans (Ref. 493, Ref. 103) • UCH Procedure (Ref. 99)	
External context	No objections or claims were raised regarding seabed disturbance arising from subsea IMR activities.	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential risks associated with the activity are not inconsistent with any recovery plan, conservation advice, or relevant bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
Reduce the risk of impacts to sensitive environmental receptors^ within the OA from petroleum activities	**IM Plans** IMR activities undertaken only when necessary (in accordance with pre-determined IM Plans acceptance criteria)	Records show that IMR activities undertaken only when necessary (in accordance with pre-determined IM Plans Acceptance Criteria)
	Activity-specific HIRA Activity-specific HIRA undertaken prior to maintenance or repair activity commencing	Records show that activity-specific HIRA undertaken prior to maintenance or repair activity commencing.
		Assessment to include consideration of the potential impacts to ENV001, ENV002 and ENV003 for all IMR activities within 500 m of these areas.
	IMR work procedures IMR activity specific work procedures developed and implemented	Records show that activity specific work procedures are developed for each IMR activity and address HIRA findings, including any additional controls identified for implementation
No impacts or risks to underwater cultural heritage from the petroleum activity	**Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies)**	Relevant persons consultation records

	Ongoing consultation with First Nations people and/or representative bodies is undertaken as per the respective engagement plan and/or consultation protocol	
	Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies) If new information on cultural values or features within the OA or EMBA is identified during ongoing consultation or relationship building, then any subsequent changes to activities or impacts/risks within the scope of the EP, will undergo an MoC evaluation	As required, records show that the MoC process was undertaken in response to any new information on cultural values or features within the OA or EMBA
	First Nations UCH If ongoing consultation identifies the presence of, or potential for, First Nations UCH, then CAPL will undertake a MoC (Section 9.3.2.2) evaluation to determine what, if any, further actions are required to ensure that impacts and risks to UCH are being reduced to ALARP and managed to an acceptable level	Where required, records show that the MoC process was undertaken in response to any identified First Nations UCH
	UCH Procedure CAPL will implement the UCH Procedure to identify and manage any potential UCH during the petroleum activity	Induction materials include relevant UCH requirements
		Training records confirm personnel involved in offshore vessel activities and/or ROV operations have completed the induction
		Records show if UCH (or potential UCH) were identified within the OA, and what conservation and management actions were implemented
	UCH Procedure If First Nations UCH (or potential UCH) is identified during the petroleum activity, the finding is shared with the relevant First Nations representative bodies	Relevant persons consultation records
	UCH Procedure Where required, UCH finds have been reported to the relevant agency (Table 9-19)	Record of lodgement of notification to relevant agency

^ “Sensitive environmental receptors” as identified within the activity-specific HIRA

7.3.1.2 Greenhouse gas emissions

The following activities have been identified as direct emission sources for planned subsea IMR activities under this EP:

- fuel consumption from equipment during planned subsea IMR activities within the OA.

Any equipment (e.g. AUV, ROV) used to support subsea IMR activities are powered by the support vessel itself, and as such, these do not represent an additional emission source to that already accounted for by the vessel. As such, these emissions estimates have been fully incorporated into the field support direct GHG emissions inventory (Section 7.4.5.1) and subsequent risk assessment (Section 7.4.5.3).

7.3.1.3 Underwater sound

Source

Activities identified as having the potential to result in continuous non-impulsive underwater sound are:

- IMR activities—marine acoustic surveys (SSS, MBES, LBL and USBL) associated with IMR activities within the OA.

Examples of sound levels emitted from the survey equipment include:

- USBL: SPL ~185–205 dB re 1 µPa RMS @ 1 m, operating frequency ~12–50 kHz (Ref. 260).
- LBL: SPL 180–200 dB re 1 µPa RMS @ 1 m, operating frequency ~18–60 kHz (Ref. 467)
- MBES: SPL 210–225 dB re 1 µPa RMS @ 1 m, operating frequency 10–455 kHz (Ref. 467; Ref. 297).
- SSS: SPL 200–234 dB re 1 µPa RMS @ 1 m, operating frequency 9–900 kHz (Ref. 467, Ref. 297).

Potential Impacts and Risks

Impacts	C	Risks	C
Underwater sound emissions may result in: • localised and temporary change in ambient underwater sound.	5	A change in ambient underwater sound may result in: • behavioural disturbance • auditory impairment, temporary threshold shift (TTS), permanent threshold shift (PTS), recoverable or non-recoverable injury to marine fauna	5

Consequence Evaluation

Localised and temporary change in ambient underwater sound

Anthropogenic underwater sound emitted during IMR survey activities will result in a temporary change in local ambient sound levels.

Broadband underwater ambient sound levels range from 45–60 dB re 1 µPa in quiet regions (light shipping and calm seas) to 80–100 dB re 1 µPa for more typical conditions, and >120 dB re 1 µPa during periods of high winds, rain or 'biological choruses' (many individuals of the same species vocalise near simultaneously in reasonably close proximity to each other) (Ref. 279). Low-frequency ambient sound levels (20–500 Hz) are generally dominated by distant shipping plus vocalisations from great whale species. Light weather-related sounds will be in the 300–400 Hz range, with wave conditions and rainfall dominating the 500–50,000 Hz range (Ref. 279).

Survey techniques are expected to emit non-impulsive and impulsive sound emissions; however these are high frequency sound emissions which attenuate rapidly in water (Ref. 467, Ref. 297).

Underwater sound emissions associated with IMR surveys activities are expected to occur over short durations, depending on the scope of activities (refer to Section 3.4).

Given the details above, the consequence of underwater sound from surveys during IMR activities has been assessed as Minor (5) as it will result in a localised and short-term change in ambient underwater sound.

Marine Mammals

Behavioural disturbance

NMFS (US) (Ref. 360) suggested classifying some acoustic survey equipment as non-impulsive sources. MBES and SSS are considered continuous non-impulsive due to their relatively high repetition rates (≥10Hz). USBL and LBL transponders are classified as intermittent impulsive sound sources due to their low repetition rates (<10Hz). On this basis, the noise effect criteria for marine mammals behavioural disturbance from the MBES and SSS sound sources is 120 dB re 1 µPa

(SPL; L_p) (Ref. 360) and for USBL and LBL sources the behavioural disturbance criteria is 160 dB re 1 µPa (SPL; L_p).

MBES and SSS

CAPL engaged JASCO to provide technical advice on received sound levels from survey equipment (MBES and SSS) based on recorded and reported source levels in current, best available scientific literature (Ref. 309).

For MBES, JASCO (Ref. 309) predicted maximum horizontal distances between 565–1,212 m to the marine mammal behavioural response criteria for cetaceans. For SSS, a maximum horizontal distance between 340–705 m was predicted, to the marine mammal behavioural response criteria.

USBL and LBL

USBL and LBL transponders emit impulsive sounds that are expected to fall within the upper limit of low frequency cetacean hearing range and within the hearing range of high–frequency and very high–frequency cetaceans. While the sound emissions may be audible to cetaceans, due to the high frequency ranges, the sound is expected to attenuate rapidly. JASCO (Ref. 309) calculated a maximum horizontal distance of 151 m to relevant marine mammal behavioural response criteria (Ref. 309).

Several marine mammal species, including listed threatened and/or migratory low, high and very high–frequency cetaceans, have the potential to occur within the predicted ensonified area (i.e. within the OA). The predicted ensonified area for behavioural disturbance also overlaps with a migration BIA for Pygmy Blue Whales and Humpback Whales. In addition, the PMST suggests that Australian Snubfin and Humpback dolphins may be present within the OA. However, there are no known aggregation or biologically important areas for other marine mammal species, including high– and very high–frequency cetaceans, within the predicted ensonified area. Therefore, it is expected that any other marine mammal species present would be transitory.

Taking this into consideration, the focus of this evaluation is on Pygmy Blue and Humpback Whales as they are the most likely sensitive receptors.

IMR survey activities may coincide with the migration periods for Pygmy Blue Whales (northern migration peak from April to August and southern migration peak from November to December); however, given that the platform and hydrocarbon system are located outside the migration BIA (>9km distant) and the ‘most important’ and ‘suitable’ migration areas (Section 4.3.3.1.2 and Figure 4-22), IMR survey activities are not anticipated to overlap areas of migratory behaviour.

The ‘Possible Foraging Area’ off the Ningaloo Coast (Ref. 246) is >180 km from the predicted ensonified area (i.e. within the OA) and does not overlap with the ‘most important areas’ for foraging (Figure 4-23).

As the migration BIA for Humpback Whales overlaps the southern section of the OA (trunkline section), there is the potential for whales to be present during the predicted migration periods (June to October) (Section 3.2.1.6; Figure 4-21).

Given the short duration of the IMR survey activities, the limited hearing sensitivities for low-frequency whales at the survey equipment frequencies, environmental impacts are expected to be very limited. As such, the only potential impacts expected would be short-term behavioural effects to individuals, which were evaluated as Minor (5).

TTS and PTS

MBES and SSS

CAPL engaged JASCO (Ref. 309) to provide advice and predictions of maximum horizontal distances to reach PTS and TTS onset criteria (SEL_{24}) for two different types of MBES specifications, operational modes, source levels and repetition rates. Given the high frequency nature of sound emissions from the MBES and SSS equipment, these will not be audible to low frequency cetaceans and as such the following assessment will focus on high– and very high–frequency cetaceans.

For high– and very high–frequency cetaceans the predicted distances are up to 1 m and 118 m respectively to reach PTS onset criteria from the MBES source. Comparatively, for SSS equipment, PTS onset criteria (SEL_{24}) for high–frequency cetaceans were not predicted to be met and for very high–frequency cetaceans, PTS onset criteria may be met at a very close range (~4 m from the source) (Ref. 260).

Note that the SEL_{24h} is a cumulative metric that assumes a receptor is consistently exposed to the relevant noise effect criteria for a 24-hour period prior to the onset of any auditory effect or injury. Specifically, high frequency cetaceans, such as the Australian Humpback Dolphin, would need to remain within immediate proximity (0-10 m) to the sound source for an extended period (24 hours) for PTS onset to occur and this is not credible. Similarly, very high–frequency cetaceans would

need to remain within less than 118 m of the sound source for an extended period (24 hours) for PTS onset to occur and this is also not considered credible.

JASCO (Ref. 309) predicted maximum horizontal distances to reach TTS onset criteria (SEL_{24}) for high– and very high–frequency cetaceans to be 63 m and 469 m respectively from the MBES source. Comparatively, for SSS equipment, TTS onset criteria (SEL_{24}) for high– and very high–frequency cetacean was predicted to be met at a very short distance from the source—1 m and 109 m respectively (Ref. 260).

Given the small predicted distances, and the requirement for exposure at these levels to occur over 24 hours to result in auditory impairment or injury, TTS and PTS to marine mammals from MBES and SSS acoustic survey techniques are not considered credible and therefore are not evaluated further.

USBL and LBL

The impulsive sound emissions from USBL and LBL transponders are expected to fall within the upper limit of low frequency cetacean hearing range and within the hearing range of high frequency and very high–frequency cetaceans. While the sound emissions may be audible to cetaceans, due to the high frequency ranges the sound is expected to attenuate rapidly.

As USBL and LBL are considered as impulsive sound emissions, both SPL (PK) and SEL_{24} threshold criteria considered in the modelling (Ref 309).

The per-pulse peak pressure source level of the USBL and LBL transponders, ~185–205 dB re 1 µPa RMS @ 1 m, is near the established PK threshold criteria for TTS and PTS onset for marine mammals for impulsive sound and therefore PK threshold criteria may be exceeded but only at very close distances of 2 m and 4 m for PTS and TTS respectively and only for very high frequency cetaceans.

JASCO (Ref. 309) predicted maximum horizontal distances to reach PTS onset criteria (SEL_{24}) for low, high– and very high–frequency cetaceans to be 69 m, 94 m and 2400 m respectively. The predicted maximum horizontal distances to reach TTS onset criteria (SEL_{24}), for low, high– and very high–frequency cetaceans to be 355 m, 470 m and 4501 m respectively.

Activities (e.g. active ROV) that utilise USBL and LBL are typically intermittent and of short duration during the longer IMR activity. Given this, and the need for marine mammals to remain within close proximity and continue to be exposed to these sound levels for extended durations (more than 24 hours) before auditory impairments or injuries occur, TTS and PTS to marine mammals from USBL or LBL transponders during acoustic surveys are not considered credible and are not evaluated further.

Marine Reptiles

Sea snakes

The threatened Short-nosed Sea snake or Leaf-scaled Sea snake are not expected to be present within the OA given known habitat preferences for shallow water and reef habitat; underwater sound has also not been identified as a threat for either species (Ref. 213; Ref. 214). Other EPBC marine listed sea snake species may occur in broader habitats within the NWMR, however noise pollution has not been identified as a pressure for sea snake species (Ref. 218). As such, underwater sound is not considered to be a significant factor in sea snake behaviour or survival.

Marine turtles – Behavioural disturbance

Studies of marine turtle in-water hearing indicate that their hearing detection generally lies between 50 and 1600 Hz, with peak sensitivity between 100 and 400 Hz (Ref. 224). Furthermore, qualitative sound exposure guidelines by Popper et al. (2014) estimate the risk to marine turtles from low-frequency sonar to be low, and midfrequency sonar to be non-existent (Ref. 473). Given turtles are only analysed to behaviourally respond to acoustic sources up to 2 kHz, behavioural or physiological effects from the proposed acoustic survey equipment, operating at frequencies >9 kHz, are not credible and are not evaluated further.

Fish

Sound emissions that exceed 9 kHz would not be heard by fish. Fish hearing is restricted to below 4 kHz and mostly also below 1 kHz (Ref. 273), as such the frequencies of sound produced by the, MBES or SSS units (~9 kHz to >100 kHz) will not be audible to fish. Therefore, no effects are predicted for fish from the considered acoustic survey equipment, and it is not evaluated further.

ALARP decision context justification

Offshore acoustic surveys are commonplace and well-practised nationally and internationally. The application of control measures to manage impacts and risks arising from this aspect are well defined, understood by the industry, and are considered standard industry practice.

During stakeholder consultation, no objections or claims were raised regarding underwater sound emissions arising from the activity. Although some species that are known to be sensitive to underwater sound have the potential to be exposed to underwater noise above exposure criteria during these activities, the impacts and risks arising from underwater sound emissions are considered lower-order impacts and risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect. Notwithstanding this, CAPL has considered additional mitigation measures that could potentially lower the risk to Pygmy Blue Whales, Humpback Whales and Whale Sharks associated with underwater sound emissions arising from the activities covered in this EP.		
Good practice control measures and source		
Control measure	**Source**	
EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans	The requirements to manage interactions between vessels and cetaceans are detailed in the EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans. These regulations describe strategies to ensure cetaceans are not harmed during offshore interactions with people. While this legislative requirement is for vessels (and not specifically acoustic survey equipment), by implementing the caution and approach zones, the potential for interaction with marine fauna, and any subsequent environmental impact, is reduced.	
Biodiversity Conservation Regulations 2018	The requirements to manage interactions with marine fauna (including cetaceans, Whale Sharks, and Dugongs) and relevant separation distances are detailed in the WA Biodiversity Conservation Regulations 2018. By implementing these control measures and managing interactions with marine fauna near the vessels or any site surveys, the potential impacts from underwater sound are limited.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
Limiting the duration and frequency of IMR activities during peak sensitive periods of the year for Pygmy Blue Whales and Humpback Whales	Adopting this control would remove the risk of effects from continuous non-impulsive underwater sound to Pygmy Blue Whales and Humpback Whales. Notably, the predicted peak migration periods in the Montebello Island region for Pygmy Blue Whales are May–June (northern) and November–December (southern), and for Humpback Whales is late-July (northern) and early-September (southern) (Table 4-16). Additionally, physical injury or TTS hearing impairment is not credible for IMR activities in this EP for Pygmy Blue Whales. Behavioural disturbance may occur over relatively short distances from the source, up to 1,212 m and 705 m for MBES and SSS respectively. As such, limiting IMR activities to a 5-month period each year, outside of Pygmy Blue Whale	The cost of implementing temporal restrictions increases risk to the integrity of the hydrocarbon system and is considered grossly disproportionate to the negligible environmental benefit (and no change in residual risk) they may provide for Pygmy Blue and Humpback Whales. Therefore, the control measure has not been adopted for use.

	migration period, is not considered to provide any additional environmental benefit to whales and increases the risks to the integrity of the hydrocarbon system from limiting the duration and frequency of IMR activities.	
Use of marine fauna observations during night-time or poor visibility for vessel-based activities	Use of marine fauna observers (MFOs) may be used to assist in detecting the presence of individuals or groups of cetaceans during daylight hours under good visibility conditions only. Use of acoustic monitoring (e.g. passive acoustic monitoring [PAM]) is most effective for detecting odontocetes (toothed cetaceans, e.g. orcas, dolphins, Sperm Whales) that produce clicks and whistles that can be more readily differentiated from low frequency vessel noise, than low frequency calls by baleen whales (e.g. Humpback, Pygmy Blue, Fin, Sei, Bryde's Whales). As such, PAM is not considered to be appropriate for use in detecting baleen whales such as Pygmy Blue Whales.	The significant additional cost of using MFOs or PAM operators on board for the duration of an IMR vessel activity when there may be few or no detections of the targeted low-frequency whale species (i.e. Pygmy Blue Whale) during night-time or poor visibility conditions is considered grossly disproportionate to any limited environmental benefit. Therefore, control measure has not been adopted for use.
Implement a shutdown zone around acoustic survey equipment for: • whales • marine turtles.	Limited. The areas of disturbance for these devices are limited and auditory injury/PTS/TTS is not expected to occur.	Acoustic surveys are infrequently conducted as part of the Petroleum Activities Program. The source levels and frequency range of these devices are mostly outside the estimated frequency hearing range of identified protected species (whales and turtles), so costs are considered disproportionate to benefits. Therefore, control measure has not been adopted for use.
Likelihood and risk level summary		
Likelihood	Sound frequencies from acoustic survey equipment are outside of the hearing range for marine turtles and fish, as such, impacts are not considered credible (Ref. 260). Sound from survey equipment is likely audible to cetacean species and may result in behavioural responses (i.e. avoidance behaviour) when received sound levels are at or above the marine mammal behavioural response criteria (120 dB re 1 µPa (Ref. 332)). Although localised and temporary behaviour disturbance may occur, it is unlikely that this would result in any impact to a sensitive life stage of the fauna identified. Consequently CAPL considers the likelihood of the consequence occurring as being Remote (5).	

<table>
<tr><td>Risk level</td><td>Very low (9)</td></tr>
<tr><td colspan="2">Acceptability summary</td></tr>
<tr><td>Principles of ESD</td><td>The impacts and risks associated with this aspect are limited to localised, short-term behavioural changes. On the assumption that this potential impact occurs during a sensitive life stage, CAPL would not expect these activities to affect migration, or foraging behaviours, nor impact on individuals or the wider population. As such, this aspect is not considered as having the potential to affect biological diversity and ecological integrity.
The consequence associated with this aspect is Minor (5).
Therefore, no further evaluation against the Principles of ESD is required.</td></tr>
<tr><td>Relevant environmental legislation and other requirements</td><td>Legislation and other requirements considered applicable for this aspect include:
EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans
Biodiversity Conservation Regulations 2018
Conservation Management Plan for the Blue Whale 2015–2025 (Ref. 200)
Conservation Advice Rhincodon typus Whale Shark (Ref. 454)
Recovery Plan for Marine Turtles in Australia (Ref. 129).
Conservation Advice for Sousa Sahulensis (Australian Humpback Dolphin) (Ref. 170)
Conservation Advice for Orcaella Heinsohni (Australian Snubfin Dolphin) (Ref. 164)
Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) (Ref. 213)
Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake) (Ref. 214).
Approved Conservation Advice for Pristis pristis (Largetooth sawfish) (Ref. 163).
CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.
<table>
<tr><th>Requirement</th><th>Demonstration</th></tr>
<tr><td>EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans
Caution and no approach zones for interacting with cetaceans from vessels</td><td>Requirements of regulation 8.05 and 8.06 for vessels interacting with cetaceans has been incorporated into the EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans control measure.</td></tr>
<tr><td>Conservation Management Plan for the Blue Whale 2015–2025
Management action A.2.3: Anthropogenic noise in BIAs will be managed such that any blue whale continues to utilise the area without injury, and is not displaced from a foraging area</td><td>The predicted ensonified area from acoustic surveys may overlap with the migration BIA for Pygmy Blue Whales at the seaward side of the fields. Notably the ensonified area is not predicted to intersect with any breeding, resting or foraging BIAs for Pygmy Blue Whales.
Physical injury or TTS hearing impairment is not credible for IMR activities in this EP for Pygmy Blue Whales. Behavioural disturbance may occur over relatively short distances from the source, up to 1,212 m and 705 m for MBES and SSS respectively.
As such, the subsea IMR activities would not present a risk or cause an impact to Pygmy Blue Whales. Therefore, this activity is not considered to be</td></tr>
</table>
</td></tr>
</table>

		inconsistent with the Conservation Management Plan for the Blue Whale.
	Recovery Plan for Marine Turtles in Australia Management action A1.5: Manage anthropogenic activities to ensure marine turtles are not displaced from identified HCTS Management action A1.6: Manage anthropogenic activities in BIAs to ensure that biologically important behaviour can continue	Sound emissions that exceed 10 kHz would not be heard by marine turtles and as such would not present a risk or cause an impact. Therefore, this activity is not considered to be inconsistent with the Recovery Plan for Marine Turtles in Australia.
	Conservation Advice for the Whale Shark 2015–2020 No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake) No specific conservation action identified.	N/A
	Conservation Advice for Sousa Sahulensis (Australian Humpback Dolphin) No specific conservation action identified.	N/A
	Conservation Advice for Orcaella Heinsohni (Australian Snubfin Dolphin) No specific conservation action identified.	N/A

<table>
<tr><td></td><td>Conservation Advice for Pristis pristis (Largetooth sawfish)
No specific conservation action identified.</td><td>N/A</td></tr>
<tr><td>Internal context</td><td colspan="2">No CAPL environmental performance standards / procedures were deemed relevant for this aspect.</td></tr>
<tr><td>External context</td><td colspan="2">No objections or claims were raised regarding underwater sound emissions arising from subsea IMR activities.</td></tr>
<tr><td>Defined acceptable level</td><td colspan="2">These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.
However, in alignment with Section 5.7, where the aspect is listed as threat to a protected matter, or identified as a concern to a listed conservation value, CAPL will define an acceptable level of impact that aligns with the objectives of these documents.
Objectives of the relevant documents are shown below.</td></tr>
<tr><td></td><td>Plan</td><td>Objective</td></tr>
<tr><td></td><td>Conservation Management Plan for the Blue Whale 2015–2025</td><td>Recovery objective: Minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list.
Interim objective 4: Anthropogenic threats are demonstrably minimised.</td></tr>
<tr><td></td><td>Recovery Plan for Marine Turtles in Australia</td><td>Recovery objective: The long-term recovery objective for marine turtles is to minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list.
Interim objective 3: Anthropogenic threats are demonstrably minimised.</td></tr>
<tr><td></td><td colspan="2">CAPL has defined the following acceptable level of impact such that it is not inconsistent with these documents:
impacts from the petroleum activity are managed such that it would not prevent the long-term recovery of protected species
no auditory injury (TTS or PTS) to Pygmy Blue Whales within a BIA resulting from underwater sound from the petroleum activity
no displacement of Pygmy Blue Whales from foraging areas resulting from underwater sound from the petroleum activity.
CAPL considers that the petroleum activity, with the control measures as described for this aspect in place, meet this acceptable level. In particular that by managing the risk to marine fauna, that the risk to values of the AMP are also subsequently managed to this acceptable level.</td></tr>
<tr><td>Environmental performance outcome</td><td>Performance standard / Control measure</td><td>Measurement criteria</td></tr>
<tr><td>No injury or mortality to marine fauna</td><td>EPBC Regulations 2000 and Biodiversity</td><td>Induction materials include relevant marine fauna caution and no approach zone requirements</td></tr>
</table>

within the OA from petroleum activities	**Conservation Regulations 2018** Vessels under transit within the OA will implement caution, approach or separation distances (and associated vessel speeds): • caution zone (300 m either side of whales; 15 m either side of dolphins)–vessels must operate at ≤6 knots within this zone, maximum of three vessels within zone, and vessels should not enter if a calf is present • no approach zone (300 m to the front and rear of whales and 100 m either side; 300 m for whale calves; 150 m to the front and rear of dolphins and 50 m either side)–vessels should not enter this zone and should not wait in front of the direction of travel of an animal or pod, or follow directly behind • a separation distance of 30 m from whale sharks and marine turtles, and 100 m from Dugongs–vessels must operate at ≤6 knots when moving away to maintain these separation distances.	Training records confirm offshore personnel involved in IMR activities have completed the induction
		Vessel records show if marine fauna interaction occurred within caution or approach zones, and what mitigation (e.g. divert or slow vessel) measure was implemented

7.3.1.4 Planned discharges—Subsea operations

Source

Activities identified as having the potential to result in planned subsea operational discharges are:

- subsea IMR operations within the OA.

The types of planned subsea operational discharges include small volumes of control fluids, hydraulic fluids, MEG, acid-water mix, preservation fluids, chemical dye, scale inhibitor, production fluids, and chemically treated potable water.

Potential impacts and risks

Impacts	C	Risks	C
Planned IMR discharges may result in: • localised and temporary reduction in water quality.	6	A change in ambient water quality may result in: • indirect impacts to fauna arising from chemical toxicity.	6

Consequence evaluation

Localised and temporary reduction in water quality

The release of minor quantities of MEG, production fluids, acid-water mix, and control fluids during IMR activities may result in a localised and temporary reduction in water quality around the discharge point. Discharge of small volumes of these fluids are predicted to disperse and dilute rapidly while floating rapidly towards the surface. The spatial extent is likely to be limited to the water column, and only in a range of metres from the discharge point.

IMR discharges along the trunkline, where no maintenance activities are planned, are expected to be limited to typical minor hydraulic releases from ROVs during routine inspections and potentially minor discharges of acid-water mix, if required to remove calcareous marine growth from the single SSIV located ~100 m downstream of the platform prior to pigging. A typical acid–water mix discharge may comprise 20 L, however, a 400 L discharge (representing a more conservative estimate), would be expected to quickly dilute and neutralise as it reacts with the calcareous material being removed from the subsea infrastructure.

Maintenance activities are planned only for subsea infrastructure upstream of the platform. Depending on the location along the hydrocarbon system that the IMR activity occurs, environmental values and sensitivities that may be present in the vicinity of water quality changes include fish communities (ancient coastline and continental slope) and ridgeline habitats. Any discharges during IMR activities are expected to result in limited environmental impacts.

As subsea discharges are highly influenced by natural dispersion and dilution processes, the extent of exposure is most influenced by the volume of the release. Consequently, the planned discharges are expected to result in a limited environmental impact, and the consequence level was determined as Incidental (6).

Potential chemical toxicity

As described above, these discharges are expected to result in temporary reductions in water quality within the immediate surroundings of the release location. The extent of this water quality reduction is limited to around the subsea infrastructure.

The particular values and sensitivities within the OA identified as having the potential to be exposed to these discharges are:

- ancient coastline at 125 m depth contour (KEF)
- continental slope demersal fish communities (KEF)
- Montebello AMP
- commercial fisheries.

Although the KEFs have been identified as having the potential to be exposed, as described in Section 4.3.7.1, surveys indicate that the seabed in the OA around the subsea infrastructure such as flowlines and drill centres, mostly comprises unvegetated, soft, and unconsolidated sediments with a low but varying degree of benthic invertebrate habitation. Given that biologically important habitats tend to be found in areas of rocky escarpment rather than soft sediments (Ref. 216) exposure to habitats comprising high levels of diversity are not expected. The *North-West Marine*

Bioregional Plan (Ref. 216) does not identify toxicity or chemical pollution/contaminants as a key threat to the KEFs or Montebello AMP. Given the rapid dilution and dispersion conditions, low bioaccumulation potential and the high biodegradability of the control fluids, and intermittent frequency of discharges, bioaccumulation in the receiving environment and sublethal impacts are expected to be limited. Consequently, the release of subsea discharges are expected to result in a limited environmental impact, and the consequence level was determined as Incidental (6).		
ALARP decision context justification		
Subsea discharges associated with IMR activities are commonplace and well-practiced within the industry. The control measures to manage the risk associated with these planned discharges are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL During stakeholder consultation, no objections or claims were raised regarding planned discharges from subsea IMR activities arising from the activity. The impacts associated with these discharges are lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.		
Good practice control measures and source		
Control measure	**Source**	
Hazardous materials selection process	As part of the hazardous materials selection process, hazardous materials that will be discharged to the environment will undergo a detailed environmental assessment, as per CAPL's *Hazardous Materials Management Procedure* (Ref. 76).	
Activity-specific HIRA	The HIRA will include HSE Specialist participation to identify and assess potential environmental impacts and risks associated with the specific maintenance or repair campaign proposed. The HIRA will consider relevant information, which may include: • proximity to potentially sensitive environmental receptors • other known activities and/or impacts that have occurred at that location • material minimisation • alternative materials • alternative execution methodologies • learnings from previous comparable IMR activities/campaigns. Where the HIRA identifies that risks and impacts are potentially greater than those assessed in this EP, the management of change process will be triggered (Section 9.3.2.2).	
IMR work procedures	Activity specific work procedures are developed and address HIRA findings, including any additional controls identified for implementation.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	Given the nature and scale of this activity, and with standard control measures in place, it is considered Rare (6) that this discharge would result in any impact to the ecological function of the particular values and sensitivities present within the OA.	
Risk level	Very low (10).	
Determination of acceptability		
Principles of ESD	The potential impacts and risks associated with this aspect is limited to a short-term direct reduction in water quality in a localised area, which is	

	not considered as having the potential to affect biological diversity and ecological integrity. Accordingly, the consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No environmental legislation or other requirements were deemed relevant for this aspect.	
Internal context	This CAPL environmental performance standard / procedure was deemed relevant for this aspect: • *Hazardous Materials Management Procedure* (Ref. 76).	
External context	No objections or claims were raised regarding discharges arising from subsea IMR activities.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No impacts to marine habitats or marine fauna outside of the OA from subsea discharges during petroleum activities	**Hazardous materials selection process** Hazardous materials planned for discharge to the marine environment are subject to the selection process as per the CAPL's *Hazardous Materials Management Procedure* (Ref. 76).	Hazardous materials selection process assessment records (or similar)
	IMR work procedures IMR activity specific work procedures developed and implemented	Records show that activity specific work procedures are developed for each IMR activity and address HIRA findings, including any additional controls identified for implementation,
	Activity-specific HIRA Activity-specific HIRA undertaken prior to maintenance or repair activity commencing	Records show that activity-specific HIRA undertaken prior to maintenance or repair activity commencing

7.3.1.5 Unplanned release—Loss of containment

Source

Activities identified as having the potential to result in a minor LOC event:

- subsea IMR operations within the OA.

Based on the activities described in this EP, the following potential minor LOC scenarios were identified:

- mechanical failure/damage of ROV/AUV resulting in a loss of hydraulic fluid[1].

[1] Offshore single point failure of the ROV hydraulic systems could result in hydraulic fluid release to the marine environment, ~<1 m^3.

Potential Impacts and Risks

Impacts	C	Risks	C
N/A	-	Unplanned release of hazardous material to the environment may result in: • indirect impacts to fauna arising from chemical toxicity	6

Consequence Evaluation

As the potential release volumes are small (~1 m^3), the extent of water quality changes is only likely to be a few metres in the water column around the release, prior to dispersion and dilution. The potential spills from an ROV performing IMR activities would have negligible changes to water quality, with no identified potential consequences to environmental values.

Depending on the location of the IMR activities along the hydrocarbon system, the environmental values in the vicinity can include fish communities. Interaction of fish immediately after the fluid release has the worst-case potential of acute effects on individuals.

Because a release would disperse and dilute rapidly, the potential consequence is limited to a short time after the release. The potential consequences to marine fauna from of a change of water quality from an ROV release could be limited. No adverse effects to fish communities are predicted. Therefore, the consequence was ranked as Incidental (6).

ALARP Decision Context Justification

Offshore operations including IMR and vessel operations are commonplace and well-practiced industry activities. The control measures to manage the risk associated with LOC scenarios from these activities are well defined via legislative requirements that are considered standard industry practice. There is a good understanding of potential spill sources, and the control measures required to manage these are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding unplanned discharges from subsea IMR activities arising from the activity.

The impacts associated with these discharges are lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
None identified	No controls have been applied for these impacts and risks as subsea IMR minor LOC management is a lower-order impact and risk; no industry standard controls are required for offshore minor LOC events where minimal impacts and risks are present.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
N/A	N/A	N/A

Likelihood and risk level summary

Likelihood	The likelihood that a minor LOC event results in an Incidental (6) consequence was determined to be Remote (5). With the control measures in place, it was considered unlikely that a minor LOC event associated with this activity would occur, and even more unlikely that such an event would impact any of the identified values and sensitivities.	
Risk level	Very low (10).	
Determination of acceptability		
Principles of ESD	The risks associated with this aspect are expected to have a limited environmental impact, and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no additional evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No environmental legislation or other requirements were deemed relevant for this aspect.	
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.	
External context	No objections or claims were raised regarding minor LOC management arising from subsea IMR activities.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
N/A	**N/A**	N/A

7.3.2 Onshore IMR

7.3.2.1 Physical presence—Terrestrial fauna

Source			
Activities identified as having the potential to result in an interaction with terrestrial fauna are: • excavations left open overnight.			
Potential Impacts and Risks			
Impacts	**C**	**Risks**	**C**
N/A	-	Unplanned interactions with terrestrial fauna may result in: • injury or death of terrestrial fauna.	6
Consequence Evaluation			
Although no significant habitat for terrestrial fauna is known to occur within the OA, mobile fauna have the potential to be encountered. Excavation associated with the petroleum activity relates to onshore IMR and is expected to be infrequent. However, if excavation is undertaken and left open overnight, there is a potential for fauna to be attracted for shelter and fauna entrapment, injury, or increased predation resulting in mortality could occur (Ref. 489; Ref. 204). Any fauna trapping within an open trench is expected to impact at individual and not population levels. Based upon the nature of the activities covered under this EP, any fauna incidents (if any) are expected to be low in numbers. As such, the consequence has been ranked as Incidental (6).			
ALARP Decision Context Justification			
The pathways for interacting with fauna are well understood. Management measures for these hazards are also well understood and implemented by the industry. During stakeholder consultation, no objections or claims were raised regarding terrestrial fauna impacts arising from the activities. The risks associated with physical interaction with terrestrial fauna are considered lower-order impacts and risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.			
Good practice control measures and source			
Control measure	**Source**		
Fauna management	The implementation of fauna exclusion and egress management measures where fauna traps are present are considered good practice to reduce likelihood of entrapment, whilst providing means of egress if the initial exclusionary barriers fail. Specifically, CAPL will consider egress controls and physical barriers will be implemented, where required, in excavations left open overnight. Any fauna found, will be removed by a trained fauna handler.		
Additional control measures and cost benefit analysis			
Control measure	**Benefit**	**Cost**	
N/A	N/A	N/A	
Likelihood and risk level summary			
Likelihood	Given the amount of vehicle and excavation activity planned within the onshore right of way (ROW), and with the control measures in place, the likelihood of the activities causing a fauna death or injury is Remote (5).		
Risk level	Very low (10).		

Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect is limited to individuals and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No environmental legislation or other requirements were deemed relevant for this aspect.	
Internal context	CAPLs environmental performance standards / procedures considered relevant to this aspect include: • Wheatstone Operations – Downstream Green Guide Environmental Manual (Ref. 112).	
External context	During stakeholder consultation, no objections or claims were raised regarding this aspect.	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No injury or mortality to terrestrial fauna within the OA from petroleum activities	**Fauna management** Fauna exclusion measures will be considered for any excavations deeper than 500 mm that is planned to be open for greater than 12 hours. Suitable exclusion measures may include fauna fencing, lids, or covers. Where complete exclusion is not practicable for such excavations, fauna exit ramps, scramble nets, or other egress measures will be considered.	Records confirm fauna exclusion or fauna egress measures have been considered and approved by CAPL for activities requiring excavation deeper than 500 mm that is planned to be open for greater than 12 hours.
	Fauna management Fauna handling of injured fauna, where required, is undertaken by a trained fauna handler.	CAPL Wildlife Database records confirm fauna interactions were conducted by trained fauna handlers.

7.3.2.2 Ground disturbance

Source			
Activities identified as having the potential to result in ground disturbance are: • temporary excavation of onshore pipeline during inspection or repairs.			
Potential Impacts and Risks			
Impacts	**C**	**Risks**	**C**
N/A	-	Ground disturbance[50] may result in: • inadequate reinstatement.	6
Consequence Evaluation			
Bell-hole access may be required infrequently (e.g. every ~5 years) during onshore IMR, or during unplanned pipeline repair activities (Section 3.4.2). If ground disturbance did occur, it would occur within the short ~1 km length of trunkline between the end of the microtunnel and the onshore end point (Figure 2-2). The ground above and adjacent to the pipeline in this part of PL 99 has already been disturbed through previous construction activities, remains cleared, and is within the Ashburton North Strategic Industrial Area (ANSIA) and the disturbance footprint approved under MS 873. No significant habitat is known to occur within the OA. The risk of inadequate site reinstatement for this location is minimal as there is no social impact (i.e. no other land users functions, interests, or activities would be affected), and no ecological impact given the previous and ongoing disturbance due to its location within the ANSIA. As such, CAPL has ranked the consequence as Incidental (6).			
ALARP Decision Context Justification			
The pathways for ground disturbance are well understood. Management measures for these hazards are also well understood and implemented by the industry. During stakeholder consultation, no objections or claims were raised regarding ground disturbance impacts arising from the activities. The risks associated with ground disturbance are considered lower-order impacts and risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.			
Good practice control measures and source			
Control measure	**Source**		
Top-cover management	Any excavated soil material will be appropriately stockpiled within a previously disturbed area to enable it to be reinstated following the relevant IMR activity.		
Additional control measures and cost benefit analysis			
Control measure	**Benefit**	**Cost**	
N/A	N/A	N/A	
Likelihood and risk level summary			
Likelihood	Given the limited amount of excavation activity planned within the onshore ROW, and with the control measures in place, the likelihood of the activities resulting in inadequate reinstatement is Rare (6).		
Risk level	Very low (10).		

[50] Given the approximate depth of bell-holes (~0.5 m; Section 3.4.2), and that the presence of PASS is considered to occur at or below the water table (Section 4.3.5), there is no credible risk associated with acid sulphate soils from ground disturbance, and as such this has not been evaluated.

Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect is limited to individuals and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No environmental legislation or other requirements were deemed relevant for this aspect.	
Internal context	CAPLs environmental performance standards / procedures considered relevant to this aspect include: • Wheatstone Operations – Downstream Green Guide Environmental Manual (Ref. 112).	
External context	During stakeholder consultation, no objections or claims were raised regarding this aspect.	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No ground disturbance beyond the OA from petroleum activities	**Top-cover management** If any excavation works are required: • soil material will be appropriately stockpiled within a previously disturbed area • soil material will be reinstated following the completion of the IMR activity	Records show excavated soil material was stored within a previously disturbed area, and reinstated following IMR activities

7.3.2.3 Greenhouse gas emissions

The following activities have been identified as direct emission sources for planned onshore IMR activities under this EP:

- fuel combustion by equipment during planned onshore IMR activities within the OA.

While CAPL acknowledges that emissions may occur from the onshore IMR activities, these are considered to represent a negligible proportion of total emissions for the entire Wheatstone Project. As such, these onshore IMR emissions estimates have been incorporated into the field support direct GHG emissions inventory (Section 7.4.5.1) and subsequent risk assessment (Section 7.4.5.3) and have not been repeated here.

7.3.2.4 Dust emissions

Onshore IMR activities may include the environmental aspect of dust, as personnel and vehicle movements are required along the onshore pipeline section. The short (~1 km) onshore pipeline section lays in between berms, is backfilled with soil, and vegetation is absent or kept sparse to enable inspections. The pipeline embankment slopes are protected by rock.

The exposed onshore area is short and narrow. Vegetation near the pipeline is common in the wider region and is not unique or particularly sensitive to windblown dust. Dust levels are not expected to be above natural levels in the area. Rainfall during the wet season removes dust on leaf and stem surfaces. A long-term monitoring program that investigated impacts of dust on vegetation for a significant development in the Pilbara over a 5-year period, where significantly higher volumes of vehicles (heavy and light) and earthworks were present, determined that no adverse impacts occurred to plant health or vegetation communities as a result of construction dust loads (Ref. 65).

No change or effect on vegetation health beyond natural variation is expected from dust and therefore dust is not a credible hazard to the environment.

7.3.2.5 Light emissions

Onshore IMR activities may include the environmental aspect of artificial lighting. IMR night works are not planned; however, in exceptional circumstances night works may be required for short durations (e.g. depending on the severity and risk of the repair requirement; Section 3.4.2.2), with the use of temporary lighting limited to only that necessary to illuminate safe work areas. As described in Section 3.4.2.2 onshore IMR activities are restricted to the ~1 km of trunkline between the end of the microtunnel and the onshore end point. In the unlikely event that IMR lighting is required, the lights would be limited to this small length of the trunkline, generate minimal sky glow, and only be used for short periods. Sky glow brightness decreases steeply with distance from the light source via an inversely proportional relationship:

$$intensity \propto \frac{1}{distance^{2.5}}$$

The nearest turtle nesting beach is several kilometres from the area, and foredunes are expected to further obscure any light glow generated by lighting used within the PL 99 ROW. In addition, any light sources from IMR activities will be negligible in relation to lighting associated with neighbouring onshore facilities. Given the

location and negligible exposure of artificial light, there are no credible hazards to fauna.

7.3.2.6 Fire

Due to the nature and scope of onshore IMR activities occurring within the ~1 km length of trunkline between the end of the microtunnel and the onshore end point, and that these activities occur within cleared areas, a fire event resulting from these activities was not deemed credible.

In the event of fire emergency unrelated to the petroleum activities under this EP, the management of such events within the pipeline licence is managed at a project-level via the *Emergency Response Plan – Wheatstone LNG Plant* (Ref. 95).

7.3.2.7 Non-indigenous species

Source

Activities identified as having the potential to result in the introduction of a non-indigenous species (NIS) are:

- presence of NIS on vehicles (or other plant/equipment) undertaking IMR activities within the OA.

Potential Impacts and Risks

Impacts	C	Risks	C
N/A	-	An introduction or spreading of a NIS may result in: • displacement of, or compete with, native species, ecosystems or communities.	5

Consequence Evaluation

If a NIS is translocated to the OA and subsequently become established, they may out-compete native plants, leading to loss of native flora species, changes in the structure and composition of vegetation communities, and changes in flora diversity. Once established and if not controlled, further proliferation of weeds can occur, which can be difficult to eradicate.

However, the licence area (as illustrated in Figure 2-2) is primarily exposed soil with minimal vegetation. As such, the environmental impact of introducing a NIS, is expected to be minimal.

Therefore, the potential consequence of the introduction of a NIS resulting in damage to local onshore habitats and terrestrial vegetation is ranked as Minor (5).

ALARP Decision Context Justification

The pathways for the introduction and spread of NIS are well understood, with ground disturbing activities common for onshore oil and gas activities in WA. Management measures for these hazards are also well understood and implemented by the industry.

During stakeholder consultation, no objections or claims were raised regarding spills arising from the activities.

The risks associated with the introduction of new weeds are considered lower-order impacts and risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Weed hygiene inspections	Vehicles comply with weed hygiene requirements for vehicle movement detailed in *Wheatstone Operations – Downstream Green Guide Environmental Manual* (Ref. 112), specifically the vehicles and plant working off existing cleared areas and roads are weed-free and have a weed inspection certificate prior to arriving onsite. Inspecting vehicles and machinery for weeds is a standard practice for weed prevention. Inspection and monitoring of the licence area for new or declared weed species will enable early detection and removal. This will occur every two years (in accordance with Condition 16-1(iii) of MS 873).

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
N/A	N/A	N/A

Likelihood and risk level summary

Likelihood	Given the size of the onshore area and that most of the site will be covered by hardstand (roads), there is a limited area of exposed soil with the potential to become colonised by weeds. With the

	administrative controls in place, the likelihood of introducing weeds resulting in damage to habitats is ranked as rare (6).	
Risk level	Very low (10).	
Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect is limited environmental affects and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No environmental legislation or other requirements were deemed relevant for this aspect.	
Internal context	CAPLs environmental performance standards / procedures considered relevant to this aspect include: • Wheatstone Operations – Downstream Green Guide Environmental Manual (Ref. 112).	
External context	During stakeholder consultation, no objections or claims were raised regarding NISs arising from the activity.	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No introduction and establishment of non-indigenous species within the OA due to petroleum activities	**Weed hygiene inspections** Vehicles comply with weed hygiene requirements for vehicle movement detailed in *Wheatstone Operations – Downstream Green Guide Environmental Manual*, specifically that vehicles and plant working off existing cleared areas and roads are to be weed free and have a weed inspection certificate prior to arriving onsite	Completed weed hygiene checklists
	Weed hygiene inspections Biennial monitoring and removal of declared or new weed species in the licence area	Records show inspection and removal of declared or new weed species in the licence area

7.3.2.8 Unplanned release—Loss of containment

Source

Activities identified as having the potential to result in a minor LOC event:

- IMR operations within the OA.

Based on the activities described in this EP, the following potential minor LOC scenarios were identified:

- mechanical failure/damage of hazardous materials storage resulting in a loss of diesel or other fluid[1].

[1] Onshore LOC could result in diesel or chemicals (e.g. grease, lubricants, or hydraulic fluid) being released to the onshore environment, ~<1 m^3 based on the predicted volumes used for IMR activities.

Potential Impacts and Risks

Impacts	C	Risks	C
N/A	-	Unplanned release of hazardous material to the onshore environment may result in: • soil and groundwater contamination	6

Consequence Evaluation

A minor LOC of diesel (or other fluids) onshore resulting in a <1 m^3 is the largest spill scenario associated with onshore IMR activities.

Given the onshore section of trunkline is covered by soil, the spatial extent of an onshore release would be limited to a relatively confined area around the trunkline, with most of the fluids likely to soak into the surrounding soil. Based upon Grimaz et al. (Ref. 258) it is anticipated that a release of 1 m^3 could result in up to ~<0.5 m penetration depth into the soil profile. As such, no exposure to groundwater is expected to occur from minor LOC events.

No specific values or sensitivities (e.g. TECs) are present within the onshore OA.

Given the limited spatial exposure, buried trunkline, and the previously disturbed nature of the receiving environment, any potential impact from an onshore minor LOC event are expected to the limited. As such, the consequence level was determined as Incidental (6).

ALARP Decision Context Justification

Onshore IMR operations are commonplace nationally and internationally. The source of spills arising from these activities is well understood, and control measures to manage the risk well defined via measures that are considered standard industry practice.

During stakeholder consultation, no objections or claims were raised regarding minor LOC management arising from the activity.

The risks associated with an accidental release arising from IMR activities are considered lower-order risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Secondary containment	All hazardous material liquids (including chemicals and regardless of volume) shall be stored in secondary containment and as per safety data sheet (SDS), in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual* (Ref. 112).
Spill kits and drip trays	Hazardous material transfer activities (e.g. chemical and hydrocarbon transfer) require the use of spill trays and absorbent mats to prevent the spill of hazardous material, in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual* (Ref. 112). Spill kits will be provided to allow personnel to respond to minor leaks and spills and reduce the risk of spills/leaks reaching the environment. Drip trays are available to capture drips and leaks, where safe to do so.

Minor LOC recovery	In the event of an onshore minor LOC, response and recovery shall be implemented in accordance with Section 3.1 of the *Wheatstone Operations – Downstream Green Guide Environmental Manual* (Ref. 112). This includes containment, clean-up, waste disposal, and reporting requirements.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	IMR activities are expected to be infrequent, with small volumes of diesel or other fluids potentially being released. With the controls in place, the likelihood of spills impacting soil and groundwater is ranked as Unlikely (4).	
Risk level	Very low (9).	
Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect is limited to temporary environmental affects and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No environmental legislation or other requirements were deemed relevant for this aspect.	
Internal context	CAPLs environmental performance standards / procedures considered relevant to this aspect include: • Wheatstone Operations – Downstream Green Guide Environmental Manual (Ref. 112).	
External context	During stakeholder consultation, no objections or claims were raised regarding LOC management arising from the activity.	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No unplanned release of hydrocarbons / hazardous materials to the environment during petroleum activities	**Secondary containment** All hazardous material liquids shall be stored in secondary containment	Records show that all hazardous material liquids were stored in secondary containment
	Spill kits and drip trays Hazardous material transfer activities require the use of spill trays and absorbent mats	Records show that spill kits and/or absorbent mats were used for any hazardous material transfers
Reduce the risk of impacts to the environment from the unplanned release of hydrocarbons /	**Spill kits and drip trays** Spill kits and drip trays are available for use (where hazardous materials/dangerous goods are temporarily stored	Records show spill kits and drip trays are available for use (where hazardous materials/dangerous goods are temporarily stored

hazardous materials during petroleum activities	and/or handled within the ROW during onshore IMR).	and/or handled within the ROW during onshore IMR).
	Minor LOC recovery In the event of an onshore minor LOC, containment, clean-up, waste disposal, and reporting requirements will be implemented in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual*	Records confirm that response and recovery activities were implemented in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual* in the event of an onshore minor LOC

7.3.2.9 Unplanned release—Waste

Source

Activities identified as having the potential to result in the unplanned release of waste are:

- IMR operations within the OA
- response to LOC incidents.

Waste generated during activities may be hazardous or non-hazardous and include such things as process equipment waste or contaminated soils (for LOC response). Inappropriate management and storage of waste has the potential to result in a release to the environment.

Potential Impacts and Risks

Impacts	C	Risks	C
N/A	-	Unplanned release of waste to the onshore environment may result in: • environmental pollution resulting in entanglement or injury of terrestrial fauna	6

Consequence Evaluation

If hazardous or non-hazardous waste is lost to the environment, the extent of exposure to the environment is limited (i.e. typically isolated to the individual waste component).

Terrestrial fauna is most at risk from waste include mammals and birds, through ingestion or entanglement. Ingestion or entanglement has the potential to limit feeding or foraging behaviours and thus can result in fauna injury or death. Where contaminated waste is released, it may also result in toxicity effects, which depending on concentration and duration of exposure, may result in sublethal or lethal impacts to fauna.

No particular values or sensitivities (e.g. TECs) are present within the onshore OA. Although no significant habitat for terrestrial fauna is known to occur within the OA, mobile fauna have the potential to be encountered (for any activity undertaken outside the fenced MHF).

Both IMR and response activities are discrete and infrequent activities of short duration. Therefore, given the limited temporal and spatial exposure, limited quantity of waste generated, and the transient nature of any fauna present, it is expected that any impacts from environmental pollution would result in impacts to individuals only. Thus, CAPL ranked this consequence as Incidental (6).

ALARP Decision Context Justification

Onshore IMR operations and LOC response activities are commonplace nationally and internationally. The sources of waste arising from these activities are well understood, and control measures to manage the risk well defined via measures that are considered standard industry practice.

During stakeholder consultation, no objections or claims were raised regarding waste management arising from the activity.

The risks associated with an unplanned release arising from these activities are considered lower-order risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Secondary containment	All hazardous material liquids (including chemicals and regardless of volume) shall be stored in secondary containment and as per SDS, in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual* (Ref. 112).
Waste management	Waste management shall be implemented in accordance with Section 3.2 of the *Wheatstone Operations – Downstream Green Guide Environmental Manual* (Ref. 112). Specifically, this includes storage, handling and transport, and waste disposal requirements.

Waste management contractor	The waste management contractor is responsible for waste management activities, including collecting site waste, and maintaining records of waste volumes and types.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	Environmental pollution arising from mismanaged waste onshore has occurred previously in the industry but is not expected to occur during these activities, given the control measures in place. As such, the likelihood of incidental consequences to values and sensitivities from an unplanned release of waste is considered Remote (5).	
Risk level	Very low (10)	
Determination of acceptability		
Principles of ESD	The potential risk associated with this aspect is limited to individuals and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No environmental legislation or other requirements were deemed relevant for this aspect.	
Internal context	CAPLs environmental performance standards / procedures considered relevant to this aspect include: • Wheatstone Operations – Downstream Green Guide Environmental Manual (Ref. 112).	
External context	During stakeholder consultation, no objections or claims were raised regarding waste management arising from the activity.	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order risks in accordance with Table 5-3. In addition, the potential risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No uncontrolled release of waste to the environment during petroleum activities	**Secondary containment** All hazardous material liquids shall be stored in secondary containment	Records show that all hazardous material liquids were stored in secondary containment
	Waste management The storage, handling, transport, and disposal of waste will be implemented in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual*	Records confirm that waste management activities were implemented in accordance with the *Wheatstone Operations – Downstream Green Guide Environmental Manual*

	Waste management contractor A contract is in place with a licenced third-party contractor for waste management and disposal	Records show a third-party waste contract is in place

7.4 Field Support

7.4.1 Physical presence—Other marine users

Source

Activities identified as having the potential to result in an interaction with other marine users are:

- temporary presence of vessels within the OA during IMR activities.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Unplanned interactions with other marine users may result in: • disruption to commercial shipping and fishing vessels.	6

Consequence evaluation

The use of support vessels during IMR activities has the potential to result in a disruption to other marine users, including commercial shipping or fishing vessels.

Disruption to commercial shipping and fishing vessels

The OA overlaps the fisheries management areas of three Commonwealth Fisheries. As identified in Section 4.4.1, only one of these Commonwealth managed commercial fisheries (North West Slope Trawl Fishery) has recorded fishing effort within the OA during 2018–2023 The extent to which the OA overlaps this trawl fishery management area is ~31%. Fishing activity within the Commonwealth trawl fisheries is restricted to waters >200 m water depth. The entire fishery has a small number of active permits and vessels (e.g. seven permits and three vessels were active during the 2022-2023 season [Ref. 102]).

As identified in Section 4.4.1, 12 State managed commercial fisheries have management areas and recent fishing activity that overlaps with the OA, based on the 60 NM fishery grid blocks. However, fishing activity is relatively low with small numbers of vessels in operation), and interactions with the small number of field vessels that operate over short timeframes is expected to be limited.

The OA is also located outside major shipping lanes and commercial marine traffic density within the OA is low (Figure 4-43) indicating that the IMR activity is not expected to affect major shipping channels or commercial shipping operators.

Summary

The physical presence of support vessels undertaking activities within the OA is not expected to cause significant impacts to commercial fishing and shipping vessels, and the consequences are considered limited in nature. Therefore, the potential disturbance/disruption impacts to other marine users from the physical presence of the platform is ranked as **Incidental (6).**

ALARP decision context justification

Offshore commercial vessel operations are commonplace and well-practised nationally and internationally. The control measures to manage the risks associated with unplanned interactions with other marine users are well defined and understood by the industry.

During stakeholder consultation, claims were raised relating to ongoing consultation with recreational fishers and the charter industry; notification requirements and COLREGS requirements. These claims were responded to by CAPL (refer to summary in ‘external context’ below and within appendix d).

The risks arising from the physical presence of vessels are considered lower-order risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Relevant Persons Consultation – Ongoing Consultation	Relevant persons will be advised of the commencement of key phases of activities and any relevant PSZ information.

	Communicating the activity details, location, and presence of vessels to other marine users ensures they are informed and aware, thereby reducing the risk of unplanned interactions. For planned IMR activities this notification will occur via the biannual project updates provided by CAPL to relevant persons (Table 9-5). For a major repair resulting from an unplanned event, a specific notification will be released detailing the location and duration of any works required (Table 9-5).
Maritime safety information	Maritime safety information, such as AUSCOAST navigational warnings, are issued by the Joint Rescue Coordination Centre (JRCC) Australia, part of AMSA. Under the *Navigation Act 2012*, the AHO is also responsible for maintaining and disseminating navigational charts and publications, including providing safety-critical information to mariners (including any change to prohibited/restricted areas, obstructions to surface navigation, etc.) via the Notice to Mariners system. Notice to Mariners can be permanent or temporary notifications. Where required for an IMR activities, AUSCOAST and/or Notice to Mariners will be issued; thus enabling other marine users to also safely plan their activities.
Marine Standard	Chevron's *Marine Standard Non-Tankers: Corporate OE Standard* (Ref. 100) ensures that various legislative and Chevron requirements and activities necessary for safe, reliable, and efficient marine services are met. These requirements include ensuring that crew meet the minimum competency requirements for safely operating a vessel.
Control of Work (CoW) process	CAPL's CoW process (Ref. 52) ensures that workplace safety and health hazards are assessed and managed. The work authorisation system is part of this process and includes simultaneous operations (SIMOPS) and hazard analysis. Where required under the CoW process, a SIMOPS Plan will be developed to identify and manage hazards arising from the activity and other CAPL planned petroleum activities when occurring within the same area (refer to Table 7-2).
Vessel lights and signals	Marine Order 30—Prevention of collisions and section 176 of the *Navigation Act 2012* (Cth) gives effect to the COLREGS, which has lighting and signal requirements for vessels. These requirements include the use of appropriate lights and shapes to reflect the nature of vessel activities (e.g. restricted in the ability to manoeuvre, vessels underway, etc.). These requirements ensure other marine users in the vicinity are aware of the nature of the vessel activities.
Additional control measures and cost benefit analysis	
Control measure	**Benefit** / **Cost**
N/A	N/A / N/A
Likelihood and risk level summary	
Likelihood	Due to the nature and scale of vessel activities within the scope of this EP, the slow-moving nature of vessels within the OA, the likelihood of interaction with other marine users or a vessel collision with marine fauna is considered low. Based upon previous experience, in the OA, CAPL consider that the likelihood of the consequence occurring is Remote (5).
Risk level	Very low (10)
Determination of acceptability	
Principles of ESD	The risks associated with this aspect are associated with unplanned interactions causing individual fauna death / incidental disruption to

<table>
<tr><td></td><td colspan="2">other marine users, which is not considered as having the potential to affect biological diversity and ecological integrity.
The consequence associated with this aspect is Incidental (6).
Therefore, no further evaluation against the Principles of ESD is required.</td></tr>
<tr><td rowspan="3">Relevant environmental legislation and other requirements</td><td colspan="2">Legislation and other requirements considered relevant for this aspect include:
• Commonwealth Navigation Act 2012 (Cth).</td></tr>
<tr><td>Requirement</td><td>Demonstration</td></tr>
<tr><td>Navigation Act 2012 (Cth)
Notice to Mariners</td><td>Requirement to issue a Notice to Mariners has been incorporated into the maritime safety information control measure.</td></tr>
<tr><td></td><td>Navigation Act 2012 (Cth)
Use of lights and signals as per COLREGS and Marine Order 30</td><td>Requirement to exhibit appropriate lights and signals to reflect the nature of vessel operations has been incorporated into the vessel lights and signals control measure.</td></tr>
<tr><td>Internal context</td><td colspan="2">These CAPL environmental performance standards / procedures were deemed relevant for this aspect:
• Marine Standard Non Tankers: Corporate OE Standard (Ref. 100)
• ABU Operations Process: Control of Work Manual (Ref. 52)</td></tr>
<tr><td>External context</td><td colspan="2">During relevant persons consultation, the following was raised in relation to the interaction with other marine users arising from field support activities:
• AMSA raised claims relating to notice to mariners, AMSA Response Centre (ARC) notification requirements and COLREGS requirements which are covered by the control measures maritime safety information and vessel lights and signals.
• RecFishWest raised claims that the presence of recreational fishers and the charter industry within the region requires ongoing engagement on activities planned. This has been covered by the control measure Relevant Persons Consultation.</td></tr>
<tr><td>Defined acceptable level</td><td colspan="2">These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.</td></tr>
<tr><td>Environmental performance outcome</td><td>Performance standard / Control measure</td><td>Measurement criteria</td></tr>
<tr><td rowspan="2">No impacts to other marine users outside of the OA from petroleum activities</td><td>Relevant Person consultation
Relevant stakeholders will be advised of the commencement of key phases of activities and any relevant PSZ information via biannual project updates for planned activities, or specific notification regarding major repair works</td><td>Stakeholder consultation records</td></tr>
<tr><td>Maritime safety information</td><td>Notice to Mariners records</td></tr>
</table>

	Where required, relevant agency notifi**ed** of activities, vessel movements, and requested safety exclusion zone, to enable them to generate radio-navigation warnings and/or Notice to Mariners prior to commencing offshore activities	
	Marine Standard Vessel crew will meet the minimum competency requirements as per the Chevron Marine Standard	Marine verification records indicate that vessel crews meet the minimum competency requirements of the Chevron Marine Standard
	Vessel lights and signals Vessels will comply with the requirements of Marine Order 30 – Prevention of Collisions, appropriate to the nature of their operations.	Marine verification records indicate that vessel lights and signals were consistent with the requirements of COLREGS and the *Navigation Act 2012* (Cth) during the petroleum activity
	CoW process Where required, CAPL will develop and implement a SIMOPS Plan(s) to manage IMR activities that occur within the OA	Records indicate that the CoW process has been applied and where required, a SIMOPS Plan has been developed and in place before the activity commences

7.4.2 Physical presence—Marine fauna

Source

Activities identified as having the potential to result in an interaction with marine fauna are:

- temporary presence of vessels within the OA during IMR activities.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Unplanned interactions with marine fauna may result in: • injury or death of marine fauna.	6

Consequence evaluation

Surface-dwelling fauna are the species most at risk from this aspect and thus are the focus of this evaluation. As identified in Section 4.3.3, several marine species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the OA. Several BIAs also overlap with the OA, including:

- Pygmy Blue Whale (migration)
- Humpback Whale (migration)
- Whale Shark (foraging)
- Flatback Turtle (internesting, nesting)
- Hawksbill Turtle (internesting).

A review of the documents made or implemented under the EPBC Act for all shark and cetacean species likely to be present within the OA (i.e. Flatback Turtle, Green Turtle, Hawksbill turtles [Ref. 201], Whale Sharks [Ref. 454], Fin Whale [Ref. 453], Sei Whale [Ref. 452], Blue Whale [Ref. 200], Southern Right Whale [Ref. 150] Australian Snubfin Dolphin [Ref. 164] and Australian Humpback Dolphin [Ref. 170]), indicates that either vessel disturbance or interaction (such as collisions) as a key threat to the recovery of the species.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 201) identifies vessel disturbance as a key threat; however, it also notes that this is particularly an issue in shallow coastal foraging habitats. Given vessel activity in shallow water is limited to intermittent inspection activities and unplanned repair activities, vessel disturbance to turtles is not evaluated further, and the focus of this evaluation is on cetaceans and sharks, as they provide a representative case to enable an indicative consequence evaluation to be undertaken.

For all cetacean species likely to be present within the OA, these documents indicate that management actions are limited to reporting of incidents via the national database (refer to the identified control measures) and ensuring that the risk of vessel strike is assessed (see the following text below).

Cetaceans are naturally inquisitive marine mammals that are often attracted to offshore vessels and facilities. The reaction of whales to the approach of a vessel is quite variable. Some species remain motionless when near a vessel, while others are curious and often approach vessels that have stopped or are slow moving, although they generally do not approach, and sometimes avoid, faster-moving vessels (Ref. 405).

The *Conservation Management Plan for the Blue* Whale 2015–2025 (Ref. 452) indicates that although all forms of vessels can collide with whales, severe or lethal injuries are more likely to occur by larger or faster vessels. Laist *et al.* (Ref. 310) found that larger vessels with reduced manoeuvrability moving >10 knots may cause fatal or severe injuries to cetaceans, with the most severe injuries caused by vessels travelling faster than 14 knots. Given that vessels that will be stationary or slow moving whilst undertaking the activities within the scope of this EP, any interaction with marine fauna would not be expected to cause severe injuries.

There have been recorded instances of cetacean deaths in Australian waters (e.g. a Bryde's Whale in Bass Strait in 1992) (Ref. 480), although the data indicates deaths are more likely to be associated with container ships and fast ferries. Mackay *et al.* (Ref. 322) report that four fatal and three non-fatal collisions with Southern Right Whales were recorded in Australian waters between 1950 and 2006, with one fatal and one non-fatal collision reported between 2007 and 2014.

A review of the documents made or implemented under the EPBC Act for Whale Sharks indicate that management actions should consider minimising offshore developments and transit time of

large vessels in areas close to marine features likely to correlate with whale shark aggregations (Ningaloo Reef, Christmas Island and the Coral Sea). On the basis that vessels activities are minimised to the smallest practicable extent (as also driven by economic considerations), the high-density foraging BIA is not located within the OA, and given that the nature and scale of IMR activities over the course of this EP are limited the activity is considered to be consistent with all relevant management actions.

Whale Sharks are known to spend considerable time close to the surface increasing their vulnerability to vessel strike. Whale sharks tagged off Western Australia (Ref. 488, Ref. 255) spent ~25% of their time less than 2 m from the surface and greater than 40% of their time in the upper 15 m of the water columns. Spending such considerable time within the 15 m of the surface leaves them vulnerable to collision with smaller vessels as well as larger commercial vessels that have drafts greater than 20 m below the surface. A search of the National Database did not identify any previous incidences of vessel strikes with Whale Sharks, indicating that although the risk is possible, previous events are limited in frequency. Although the OA overlaps the Whale Shark foraging BIA, vessels will be stationary or slow-moving whilst implementing the activities within the scope of this EP.

Dugongs occur throughout the shallow waters between the Pilbara offshore islands and the mainland, and are generally associated with seagrass meadows (Ref. 58). Dugongs are known to occur around the islands of the Rowley Shelf such as Barrow Island, the Lowendal Islands and the Montebello Islands (Ref. 57); however dugong populations are known to be greater in Exmouth Gulf or Shark Bay than around the offshore islands (Ref. 58; Ref. 483; Ref. 482). Studies in Queensland showed that dugongs spend around 47% of their time within ~1.5 m of the surface including ~3.5% resting at the surface (Ref. 481). As such, similar to Whale Sharks, this high proportion of time within surface waters makes dugongs vulnerable to vessel strikes. In addition, there is evidence to suggest that dugongs fail to flee or evade the approach of fast moving vessels until an interaction is unavoidable (Ref. 480). Collision with vessels has been identified as a pressure 'of potential concern' within the NWMR, however it is noted that this risk is greatest in shallow nearshore waters and vessels operating at higher speeds (Ref. 484).There are no known major seagrass meadows along the west coast of Barrow Island (Ref. 485) that are likely to be critical feeding habitats for dugong and therefore any presence within the OA (~55 km off the coast of Barrow Island) is expected to be intermittent and transitory. There is a very low possibility of interactions between field support vessels and dugongs within the shallow waters of the Pilbara Islands that intersect the trunkline portion of the OA, however its unlikely support vessels used on this activity would have the draft to operate in these shallow areas.

The threatened Short-nosed Sea Snake or Leaf-scaled Sea Snake are not expected to be present within the OA given known habitat preferences for shallow water and reef habitat; vessel strike has also not been identified as a threat for either species (Ref. 213; Ref. 214). Other EPBC marine listed sea snake species may occur in broader habitats within the NWMR, and collision with vessels has been identified as a pressure 'of less concern' (Ref. 218).

Consequently, incidences of fauna strike are not expected considering the slow vessel speed, the low number of vessels within the OA at any one time and the very low (cetaceans) and no (whale sharks) reports of fauna strikes.

If a fauna strike occurred and resulted in death, it is not expected to have a detrimental effect on the overall population; this event would result in a limited environmental impact (individual impacts); thus, fauna strike is evaluated as having the potential to result in an Incidental (6) consequence.

ALARP decision context justification

Offshore commercial vessel operations are commonplace and well-practised nationally and internationally. The control measures to manage the risk associated with fauna strike are well defined via legislative requirements that are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, claims were raised relating to the potential for disruption to intangible cultural heritage from the presence of the fields (and subsequent field support activities). These claims were responded to by CAPL (refer to summary in 'external context' below and within appendix d).

The risks arising from the physical presence of vessels are considered lower-order risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source

EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans	The requirements to manage interactions between vessels and cetaceans are detailed in the EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans. These regulations describe strategies to ensure whales are not harmed during offshore interactions with people.	
Biodiversity Conservation Regulations 2018	The requirements to manage interactions with marine fauna (including cetaceans, Whale Sharks, and Dugongs) and relevant separation distances are detailed in the WA Biodiversity Conservation Regulations 2018.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	Due to the nature and scale of vessel activities within the scope of this EP, the slow-moving nature of vessels within the OA, and the limited area of operation, the likelihood of a vessel collision with marine fauna is considered low. Based upon previous experience, in the OA, CAPL consider that the likelihood of the consequence occurring is Remote (5).	
Risk level	Very low (10)	
Determination of acceptability		
Principles of ESD	The risks associated with this aspect are associated with unplanned interactions causing individual fauna death / incidental disruption to other marine users, which is not considered as having the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered relevant for this aspect include: • EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans • Biodiversity Conservation Regulations 2018 • *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 200) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129). • *Conservation Advice Balaenoptera borealis Sei Whale* (Ref. 452) • *Conservation Advice Balaenoptera physalus Fin Whale* (Ref. 453) • *National Recovery Plan for the Southern Right Whale* (Ref. 150) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *Conservation Advice for Sousa Sahulensis (Australian Humpback Dolphin)* (Ref. 170) • *Conservation Advice for Orcaella Heinsohni (Australian Snubfin Dolphin)* (Ref. 164) • *Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake)* (Ref. 213) • *Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)* (Ref. 214). • *Approved Conservation Advice for Pristis pristis (Largetooth sawfish)* (Ref. 163).	
	Requirement	**Demonstration**

	EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans Caution and no approach zones for interacting with cetaceans from vessels	Requirements of regulation 8.05 and 8.06 for vessels interacting with cetaceans has been incorporated into the **EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans** control measure.
	Conservation Management Plan for the Blue Whale 2015–2025 Management action A.4.2: Ensure all vessel strike incidents are reported in the National Ship Strike Database Management action A.4.3: Ensure the risk of vessel strikes on blue whales is considered when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, appropriate mitigation measures are implemented	Requirements to report vessel strike incidents are included in Section 9.4.2. This section provides a risk evaluation for vessel strikes on Blue Whales, and control measures have been identified. Therefore, this activity is not considered to be inconsistent with the Conservation Management Plan for the Blue Whale.
	Recovery Plan for Marine Turtles in Australia No specific management action identified.	N/A
	Conservation Advice Balaenoptera borealis Sei Whale Conservation action: Ensure all vessel strike incidents are reported in the National Vessel Strike Database	Requirements to report vessel strike incidents is included in Section 9.4.2. Therefore, this activity is not considered to be inconsistent with the Conservation Advice Balaenoptera borealis Sei Whale.
	Conservation Advice Balaenoptera physalus Fin Whale Conservation action: Ensure all vessel strike incidents are reported in the National Vessel Strike Database	Requirements to report vessel strike incidents is included in Section 9.4.2. Therefore, this activity is not considered to be inconsistent with the Conservation Advice Balaenoptera physalus Fin Whale.
	Conservation Advice Rhincodon typus Whale Shark Conservation action: Minimise offshore developments and transit time of large vessels in areas close to marine features likely to correlate with whale shark aggregations (Ningaloo Reef, Christmas Island and the Coral Sea) and along the northward migration route that follows the northern Western Australian coastline along the 200 m isobath	The OA is outside of whale shark aggregation areas (i.e. Ningaloo Reef, Christmas Island and the Coral Sea). This activity has the potential to overlap the northward migration (July to November) period. As such, transient whale sharks may be present within the OA. Based on both environmental and economic considerations, vessel activities are minimised to the smallest practicable extent. Therefore, this activity is not considered to be inconsistent with the *Conservation Advice Rhincodon typus Whale Shark*.

	Conservation Advice for Sousa sahulensis (Australian Humpback Dolphin) No specific conservation action identified.	N/A
	Conservation Advice for Orcaella heinsohni (Australian Snubfin Dolphin) No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)	N/A
	Conservation Advice for Pristis pristis (Largetooth sawfish) No specific action identified.	N/A
	National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna No specific action identified.	N/A
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.	
External context	During consultation, relevant persons identified the potential for disruption to intangible cultural heritage (appendix d) from the presence of the Wheatstone, Iago, Julimar, and Brunello fields (and subsequent field support activities). CAPL responded confirming: • there is no proposed installation of new infrastructure associated with the EP. The Wheatstone, Iago, Julimar and Brunello infrastructure are already in place and operational. • cultural heritage features has been considered in the environment description and risk assessments within the EP. • control measures to reduce the risk of impacts to marine fauna have been included in the EP CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan. However, in alignment with Section 5.7, where the aspect is listed as threat to a protected matter, or identified as a concern to a listed conservation value, CAPL will define an acceptable level of impact that aligns with the objectives of these documents. Objectives of the relevant documents are shown below.	
	Plan	**Objective**
	Conservation Management Plan for the Blue Whale 2015–2025	Recovery objective: Minimise anthropogenic threats to allow for their conservation status to improve so that they

		can be removed from the EPBC Act threatened species list. Interim objective 4: Anthropogenic threats are demonstrably minimised.
	Recovery Plan for Marine Turtles in Australia	Recovery objective: The long-term recovery objective for marine turtles is to minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list. Interim objective 3: Anthropogenic threats are demonstrably minimised.
	Therefore, CAPL has defined the following acceptable level of impact such that it is not inconsistent with these documents: • impacts from the petroleum activity are managed such that it would not prevent the long-term recovery of protected species CAPL considers that the petroleum activity, with the control measures as described for this aspect in place, meet this acceptable level.	

Environmental performance outcome	Performance standard / Control measure	Measurement criteria
No injury or mortality to marine fauna within the OA from petroleum activities	**EPBC Regulations 2000 and Biodiversity Conservation Regulations 2018** Vessels under transit within the OA will implement caution, approach or separation distances (and associated vessel speeds): • caution zone (300 m either side of whales; 15 m either side of dolphins)–vessels must operate at ≤6 knots within this zone, maximum of three vessels within zone, and vessels should not enter if a calf is present • no approach zone (300 m to the front and rear of whales and 100 m either side; 300 m for whale calves; 150 m to the front and rear of dolphins and 50 m either side)–vessels should not enter this zone and should not wait in front of the direction of travel of an animal or pod, or follow directly behind • a separation distance of 30 m from whale sharks and marine turtles, and 100 m from Dugongs–vessels must operate at ≤6 knots when moving away to maintain these separation distances. Helicopters will: • not operate at a height lower than 1,650 feet or within a horizontal radius of 500 m for a cetacean (unless during take-off, landing or for safety reasons)	Induction materials include relevant marine fauna caution and no approach zone requirements Training records confirm offshore personnel involved in IMR activities have completed the induction Vessel records show if marine fauna interaction occurred within caution or approach zones, and what mitigation (e.g. divert or slow vessel) measure was implemented

	• not approach a cetacean from head on • maintain a separation distance of 500 m for whale sharks, Dugongs, and marine turtles.	

7.4.3 Seabed disturbance

Source

Activities identified as having the potential to result in seabed disturbance are:

- vessel anchoring.

Potential impacts and risks

Impacts	C	Risks	C
Seabed disturbance may result in: • alternation of benthic communities and habitats.	5	Seabed disturbance may result in: • changes to tangible cultural heritage values	5

Consequence evaluation

Alternation of benthic communities and habitats

Although anchoring is not a routine activity, it has been carried through as a contingent activity due to a significant weather event. As detailed by National Energy Resources Australia (NERA) (Ref. 358), a vessel anchored within water depths greater than 70 m with a single anchor could result in a total disturbance area of up to 1,300 m^2. This indicative seabed disturbance area represents <1% of the OA.

The particular values and sensitivities within the OA with the potential to be impacted by seabed disturbance include:

- ancient coastline at 125 m depth contour (KEF)
- continental slope demersal fish communities (KEF)
- Montebello AMP
- ridgeline habitat and associated communities.

Although these values and sensitivities have been identified as having the potential to be impacted from vessel anchoring activities, any disturbance will be in close proximity of existing infrastructure. As this area has been historically disturbed, any additional disturbance is expected to have limited environmental impact.

Given the nature of the receiving environment within the OA, undertaking rare and infrequent vessel anchoring activities is not expected to affect ecosystem function or connectivity of communities. As such, CAPL has ranked the consequence as Minor (5).

Changes to tangible cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6). A cluster of recorded protected UCH[51] sites (shipwrecks >75 years old) occur at the outer boundary of the OA (Section 4.6.2), in ~180–190 m water depths and ~5 km from the Julimar–Brunello trunkline (Figure 4-45). Given these depths, vessels are not able to anchor near the recorded UCH sites. No other UCH sites—including First Nations UCH—were identified within the OA. Therefore, no impacts to known protected seabed-based UCH (e.g. shipwrecks or archaeology), including tangible First Nations UCH, are expected to occur.

Given the known sea level history, the OA (i.e. areas in water depths <125 m) would have been emergent land during the extended history of First Nations occupation of Australia. At the time of writing, CAPL understands through consultation with the relevant First Nations people and/or representative bodies that there are no known artefacts or specific sites of cultural value associated with the seabed within the OA. As such, seabed disturbance within the OA is not expected to result in significant adverse impacts to tangible heritage features.

As identified from literature and/or consultation (Section 4.3.6.2.1), Sea Country is a value for First Nations people. It is understood that the term ‘Country’ refers to more than just a geographical area, and includes values, places, resources, stories, and cultural obligations associated with that geographical area (Ref. 435; Ref. 434). One of the specific tangible values of Sea Country identified through consultation was the ocean (Table 4-18)—consequence evaluations to related receptors (i.e. marine environmental quality, benthic communities and habitats) are provided above.

[51] Under Section 15 of the UCH Act, UCH is defined as “any trace of human existence that has a cultural, historical, or archaeological character, and is located under water”.

No impact pathway to a change in access to Country from planned seabed disturbance within the OA is anticipated. The consequence evaluation to benthic communities and habitats is provided above and was assessed as resulting in localised and minor environmental impacts. Further, as described in the above evaluation, changes to the benthic habitat within the disturbance footprint associated with seabed infrastructure is not expected to affect ecosystem function or connectivity.

As such, CAPL has ranked the consequence for cultural values as Minor (5).

ALARP decision context justification

Vessel anchoring is commonplace; the activities causing this aspect are practised nationally and internationally. The control measures to manage the impacts associated with seabed disturbance are well understood and implemented by the industry.

During stakeholder consultation, WAFIC raised concerns relating to routine anchoring and potential impacts to sensitive benthic habitats. CAPL responded confirming that anchoring was not a planned activity and if required, it would occur within the OA and most likely in close proximity of existing infrastructure. CAPL noted that the area has been historically disturbed, any additional disturbance is expected to have limited environmental impact.

The impacts associated with seabed disturbance are considered lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Marine Standard	Chevron's *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100) ensures that various legislative and Chevron requirements and activities necessary for safe, reliable, and efficient marine services are met. These requirements include ensuring that crew meet the minimum competency requirements for safely operating a vessel.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
Vessels will not anchor under routine conditions	By not anchoring, the potential impacts to benthic habitat are reduced.	Benefits outweigh cost/sacrifice.

Likelihood and risk level summary

Likelihood	Due to the limited area of seabed disturbance and the pre-disturbed nature of the OA, and with the control measures in place, the likelihood of cultural values impacts to from seabed disturbance is Remote (5).
Risk level	Very low (9)

Determination of acceptability

Principles of ESD	The potential impact associated with this aspect is limited to localised short-term effects that are not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.
Relevant environmental legislation and other requirements	No environmental legislation or other requirements were deemed relevant for this aspect.
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100).
External context	During stakeholder consultation, WAFIC raised concerns relating to routine anchoring and potential impacts to sensitive benthic habitats. CAPL responded confirming that anchoring was not a planned activity and if required, it would occur within the OA and most likely in close proximity of

	existing infrastructure (and is covered by the control measure **Vessels will not anchor under routine conditions).**	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
Reduce the risk of impacts to sensitive environmental receptors^ within the OA from petroleum activities	**Marine Standard** Vessels will meet the crew competency, navigation equipment, and radar requirements of the Chevron Marine Standard.	Records indicate that vessels meet the crew competency, navigation equipment, and radar requirements of the Chevron Marine Standard.
	Vessels will not anchor under routine conditions Vessels will not anchor unless in an emergency or CAPL authorisation is provided.	Records demonstrate that vessels are equipped with DP system.

^ “Sensitive environmental receptors” as identified within the activity-specific HIRA (Section 7.3.1.1)

7.4.4 Air emissions

Source

Activities identified as having the potential to result in air emissions are:

- combustion of marine fuel from vessels within the OA during IMR activities.

Potential impacts and risks

Impacts	C	Risks	C
Air emissions may result in: • localised and temporary reduction in air quality.	6	N/A	-

Consequence evaluation

Modelling was undertaken for nitrogen dioxide (NO_2) emissions from MODU power generation for another offshore project (Ref. 41). NO_2 is the focus of the modelling because it is considered the main (non-greenhouse) atmospheric pollutant of concern, with larger predicted emission volumes compared to other pollutants, and has potential to impact on human health (as a proxy for environmental receptors). Results of this modelling indicate that on an hourly average, there is the potential for an increase in ambient NO_2 concentrations of 0.0005 ppm within 10 km of the emission source and an increase of <0.1 µg/m^3 (0.00005 ppm) in ambient NO_2 concentrations >40 km away.

The *National Environmental Protection (Ambient Air Quality) Measure* (NEPM) recommends that hourly exposure to NO_2 is <0.12 ppm with annual average exposure <0.03 ppm.

Given that referencing this modelling is considered overly conservative as the volume of fuel required for power generation is expected to be significantly less for support vessels when compared to MODU operations, and as the highest hourly averages (0.00039 ppm or 0.74 µg/m^3) were restricted to a distance ~5 km from the MODU (Ref. 41), exposures from vessel activities covered under this EP would be well below NEPM standards and thus any impacts were considered to be Incidental (6).

ALARP decision context justification

Offshore commercial vessel operations and subsequent air emissions arising from these activities are commonplace in offshore environments, both nationally and internationally. The control measures to manage the risk associated with atmospheric emissions are well defined via legislative requirements that are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding air emissions arising from the activity.

The impacts arising from atmospheric emissions constitute lower-order impacts (Table 5-3). As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Reduced sulfur content fuel	Sulfur content of diesel/fuel oil complies with Marine Order 97 and Regulation 14 of MARPOL 73/78 Annex VI. Only low-sulfur (0.50 mass % concentration [m/m]) fuel oil will be used to minimise sulfur oxides (SO_x) emissions when available

Marine Order 97: Marine Pollution Prevention – Air Pollution	Prior to commencement of IMR activities, Chevron's Offshore Vessel Information System (OVIS) assessment requirements within *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100) is used to verify that all vessels comply with Marine Order 97: Marine Pollution Prevention – Air Pollution (appropriate to vessel class) for emissions from combusting fuel, including: • Vessels will hold a valid International Air Pollution Prevention (IAPP) certificate and a current international energy efficiency (IEE) certificate • All vessels (as appropriate to vessel class) will have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI • Vessel engine nitrous oxides (NO_x) emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	N/A	
Risk level	N/A	
Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect is limited to a direct reduction in air quality for a localised area for a short time, which is not considered to have the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered relevant to this aspect include: • Marine Order 97 • MARPOL 73/78	
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100).	
External context	During stakeholder consultation, no objections or claims were raised regarding air emissions arising from field support activities.	
Defined acceptable level	These impacts are inherently acceptable as they are lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No impacts to air quality outside of the OA from petroleum activities	**Reduced sulfur content fuel** Only low-sulfur (0.50 mass % concentration [m/m]) fuel oil will be used to minimise SO_x emissions when available.	Bunker receipts verify the use of low-sulfur fuel oil

	Marine Order 97: Marine Pollution Prevention – Air Pollution Prior to commencement of IMR activities, the following will be verified: • vessels will hold a valid International Air Pollution Prevention (IAPP) certificate and a current international energy efficiency (IEE) certificate • all vessels (as appropriate to vessel class) will have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI • Vessel engine nitrous oxides (NOx) emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI.	OVIS report / ABU Marine OE Inspection Checklist confirms vessels hold IAPP and IEE certificates, and a SEEMP is in place (as appropriate to class), and NOx emission levels comply with regulations

7.4.5 Greenhouse gas emissions

7.4.5.1 Direct emissions

As described in Section 7.2.3.3, CAPL has defined the emissions boundary for the assessment of direct GHG emissions in relation to the planned petroleum activities[52] within the OA as described in Section 3 of this EP. Any unplanned activities, including repairs, or emergency events, have been excluded from the emissions inventory.

The following activities have been identified as direct emission sources for planned field support activities under this EP:

- fuel combustion by vessels during planned subsea IMR activities within the OA
- fuel combustion by vehicles or plant during planned onshore IMR activities within the OA.

Any equipment (e.g. AUV, ROV) used to support IMR activities are powered by the support vessel itself, and as such these don't represent an additional emission source to that already accounted for by the vessel. In addition, while helicopter operations are described within Section 3.6.2, these are not a routine planned activity and are only associated with longer IMR scopes (e.g. repairs), and therefore have not been accounted for within this emissions inventory.

Given the proximity of the Ashburton North facility to PL 99 (Figure 2-2), and limited number of days of planned inspection works (up to ~10–15 days per year), this emission source is a negligible contribution and has not been quantified for incorporation into the emissions estimate.

Based on the boundary and inventory described above, an estimate of annual direct GHG emissions for the activities under this EP is ~0.002 Mtpa CO_2-e[53]. Planned activities under this EP are not expected to significantly vary, such that it would result in a significant change to the above estimated annual direct emissions over the next five-year in-force period of this EP. The Wheatstone Project has approval to operate until 2060 (Section 7.2.3.6).

7.4.5.2 Indirect emissions

To determine the relevance of indirect emissions to the activities under this EP, CAPL undertook an assessment against the factors for determining what is an indirect consequence, in accordance with the *'Indirect consequences' of an action: Section 527E of the EPBC Act* Policy Statement. As an outcome of this assessment, the following activities have been identified as indirect emission sources for planned activities under this EP:

- gas processing at the onshore facilities at Ashburton North[54]
- transport and third party end-use of LNG, condensate and domestic gas products.

[52] Where 'petroleum activity' is as defined within Regulation 5 of the OPGGS(E)R.

[53] Emissions calculation is based on 100 days of vessel activity, and using NGER energy content and emissions factors (Ref. 191).

[54] The "gas processing at the onshore facilities at Ashburton North" incorporates several emission sources, including gas turbine drivers, gas turbine generators, heating, flaring, venting, diesel consumption, marine tugs, and fugitive emissions.

These activities and relevant emissions estimates are consistent with those presented in Section 7.2.3.5, and have not been repeated here.

7.4.5.3 Risk assessment

Source

Activities identified as having the potential to result in GHG emissions are:

- direct emissions from planned field support activities within scope of this EP
- indirect emissions from activities associated with processing of gas at Ashburton North
- indirect emissions from the transport and third party end-use of LNG, condensate and domestic gas produced by the Wheatstone Project.

Potential impacts and risks

Impacts	C	Risks	C
GHG emissions may result in: • contribution to the reduction of the global atmospheric carbon budget (by the amount of the direct and indirect GHG associated with activities under this EP)	6	A decrease in the global atmospheric carbon budget may result in: • contribution to the anthropogenic influence on the global climate system.	—

Consequence evaluation

Contribution to the reduction of the atmospheric carbon budget

Direct GHG emissions from field support activities within scope of this EP are estimated to be ~0.002 Mtpa CO_2-e, and indirect GHG emissions from the processing of gas onshore at Ashburton North are estimated to be ~4.2 Mtpa CO_2-e[55]. Combined these emissions represent ~0.953% of national Australian emissions (when compared to FY2024 inventory of 440.6 Mt CO_2-e) (Ref. 525). The direct (from activities within this EP) and indirect (from gas processing at the onshore facilities at Ashburton North) GHG emissions are within levels previously assessed and approved for the Wheatstone Project pursuant to the EP Act and EPBC Act.

The indirect GHG emissions from the transport and third party end-use of LNG, condensate and domestic gas are estimated to be ~36.8 Mtpa CO_2-e[56,57, 58].

According to the IPCC, Sixth Assessment Report for Working Group 1 (WG1 AR6), "the total anthropogenic effective radiative forcing (ERF) in 2019, relative to 1750, was 2.72 [1.96 to 3.48] Wm^{-2} (*medium confidence*) and has likely been growing at an increasing rate since the 1970s, [and]…Over 1750–2019, CO_2 increased by 131.6 ± 2.9 ppm (47.3%)."[59]

The IPCC defines the term "carbon budget" as "refer[ing] to the maximum amount of cumulative net global anthropogenic CO_2 emissions that would result in limiting global warming to a given level with a given probability, taking into account the effect of other anthropogenic climate forcers. This is referred to as the total carbon budget when expressed starting from the pre-industrial period, and as the remaining carbon budget when expressed from a recent specified date. Historical cumulative CO_2 emissions determine to a large degree warming to date, while future emissions cause future additional warming. The remaining carbon budget indicates how much CO2 could still be emitted while keeping warming below a specific temperature level."[60]

[55] Source: EIS/ERMP (Ref. 57) for onshore facilities at Ashburton North, pro-rated and capacity adjusted.

[56] Transport emissions estimated from shipping fuel consumption scaled for a representative year of production. Emissions factors sourced from IMO Resolution MEPC.245(66) (Ref. 277) and IPCC AR5 100-year global warming potentials (Ref. 282).

[57] Emissions from third-party use of products calculated in alignment with methods in Category 11 of IPIECA's *Estimating Petroleum Industry Value Chain (Scope 3) Greenhouse Gas Emissions* (Ref. 286), including product quantity and fuel specific higher heating values, and the CO_2, CH_4 and N_2O combustion emissions factors for each fuel type. Evaluation based upon production data from a representative year, applying API compendium methodologies (Ref. 21) and factors, and IPCC AR5 100-year GWP (Ref. 282).

[58] Source: Wheatstone LNG Plant GHGMP (Ref. 86).

[59] IPCC, AR6, WG1, at TS-35

[60] IPCC, AR6, WG1, at SPM-48 footnote 43

The remaining carbon budget for a 50% likelihood to limit global warming to 1.5°C, 1.7°C, and 2°C is respectively, 500 Gt CO_2, 850 Gt CO_2, and 1350 Gt CO_2.[61].

If the total direct and indirect GHG emissions are ~41.5 Mtpa CO_2-e, then this contributes ~0.1–0.3% to the reduction in the total remaining global carbon budget, which is a *de minimis* decrease. It is noted that this estimated contribution to the total global carbon budget is based on the emissions estimates (including platform emissions [Section 7.2.3.4], IMR emissions [Section 7.4.5.1], and indirect emissions [Section 7.2.3.5]), operations continuing through to 2060 (i.e. current end of approval life), and with no allowance for future mitigation (including implementation of existing emission reduction requirements for the Wheatstone Project and customer markets, net zero aspirations, future technology or operational efficiencies, or future Australian regulatory or international policy requirements).

According to the IEA, natural gas, "which emits less carbon that most other fossil fuels", accounts for about a quarter of global electricity generation (Ref. 527). Further, IEA acknowledge that while natural gas may have a "limited role as a transition fuel from coal to renewable energy sources", it may still be needed as a back-up for variable (e.g. wind, solar) renewable power sources (Ref. 527). A comparison of life-cycle emissions intensities between LNG and coal by IEA indicated that LNG resulted in "about 25% fewer emissions than coal across energy use cases of these fuels" (Ref. 526).

Within Australia, the energy market operator considers that gas has a critical role in energy supply and security during the transition to lower carbon energy sources (Ref. 528; Ref. 529); and this is supported by the Australian Governments Future Gas Strategy (Ref. 509). Further, a supply gap in the WA's domestic gas market is projected to occur from 2030 onwards under all modelled scenarios (Ref. 529). The Wheatstone Project is one of the largest contributors to the domestic gas market in WA, having the second largest indicative domestic gas reservation, and having supplied ~19% of WA's total domestic gas supply in 2023 and 2024 (Ref. 529).

A benchmarking assessment for the LNG processing emissions was undertaken during the *Draft Environmental Impact Statement/ Environmental Review and Management Proposed Wheatstone Project* (Ref. 57). This benchmarking assessment showed that the Wheatstone Project is within the range of emissions intensities compared to other Australian projects benchmarked (Ref. 57). Benchmarking was more recently undertaken during the development of the GHGMP (Ref. 86), which estimated a net GHG emissions intensity for the Wheatstone LNG Plant as 0.27 t CO2-e per t LNG. This net emissions intensity was similar to or slightly above three other comparable gas developments (Gorgon, Pluto, NWS Extension) on the North West Shelf (Ref. 86).

The nominal project life of the Wheatstone Project (Section 3.1.2) is also considered to be consistent with the intent of the Australian Government's Future Gas Strategy in that the use of gas is expected to continue through to 2050 and beyond (Ref. 509).

The World Energy Outlook 2025 (WEO 2025; Ref. 530) presents projections of potential future energy trends based on three different scenarios: Current Policies Scenario (CPS) and Stated Policies Scenario (SPS) which are both exploratory scenarios based on energy-related policies; and the Net Zero Emissions by 2050 Scenario (NZE Scenario), a normative scenario in that it works backwards from a defined outcome . All three scenarios in the WEO 2025 projected that the long-term global mean temperature rises above pre-industrial levels exceeds 1.5°C around 2030 (Ref. 530). Under CPS and STEPS temperatures were projected to continue to rise to close to 2°C around 2050; and then to 2.9°C and 2.5°C by 2100 respectively (Ref. 530). Under the NZE Scenario, temperatures were projected to peak around 1.65°C around 2050, and then decrease back below 1.5°C by 2100 (Ref. 530).

Total global energy demand has continued to increase, and fossil fuels have provided nearly 80% of this demand between 2000 and 2024 (Ref. 530). However, the geographical context of energy demand has varied: advanced economies previously accounting for over half, now account for around one-third of global energy demand; whereas energy demand in emerging market and developing economics has more than doubled since 2000 (Ref. 530). Global energy demand is projected to continue to increase, and natural gas maintains a role (to varying extents) in global energy projections to 2050 under all three WEO 2025 scenarios. Under STEPS, the demand for natural gas is projected to peak around 2035 and then remain around this level through to 2050 (Ref. 530). The demand in advanced economies is projected to decline, while the demand in emerging market and developing economies increases (Ref. 530). The projected demand for natural gas has increased in WEO 2025 compared to the previous WEO 2024 (Ref. 530). The Wheatstone Project is an existing development that has been producing since 2017, supplying both Australian and international markets.

[61] IPCC, AR6, WG1, at SPM-29 Table SPM.2

Indirect emissions associated with the transport and third party end-use of LNG, condensate and domestic gas products is the largest category of emissions associated with Chevron's activities (Ref. 85). These types of indirect emissions are driven by domestic and global demand, which is in turn driven by economics, policy, regulation, and consumer behaviour on a global scale (Ref. 85).

In summary, given that:

- power generation from natural gas emits less carbon compared to other fossil fuel alternatives (e.g. Ref. 527; Ref. 526)
- projections in global and domestic energy trends identify natural gas as an energy source for the foreseeable future (e.g. Ref. 529; Ref. 530)
- natural gas has been recognised by the Australian Government as part of Australia's long-term energy security and transition plans (Section 7.2.3.1)
- the activities under this EP are associated with an overall *de minimis* contribution to the reduction of the global carbon budget
- Wheatstone Project has GHG emission reduction targets on a trajectory to net zero by 2050 under both Commonwealth Safeguard Mechanism and State approval conditions (Section 7.2.3.2)
- Australia has GHG emission reduction targets that align with intent of the Paris Agreement (Section 7.2.3.2)
- customer countries adopt their own regulatory mechanisms relating to GHG emissions based on various considerations, including energy policies, GHG emissions reduction ambitions, and international commitments

the potential impact of the contribution of GHG emissions from the petroleum activity (and relevant indirect consequences) to the reduction of global carbon budget has been evaluated as having the potential to result in an Incidental (6) consequence.

Contribution to anthropogenic influence on the global climate system

Refer to consequence evaluation provided in Section 7.2.3.7.

ALARP decision context justification

Field support activities are common both nationally and internationally. The control measures to manage the impacts and risks associated with Scope 1 and Scope 2 GHG emissions are defined via legislative requirements that are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

Currently, under international climate treaties (the Paris Agreement), and national legislated targets (under the *Climate Change Act* [Cth]), Australia has the following target to reduce GHG emissions: 43% below 2005 levels by 2030. This reduction target is both a single-year 'point' target and a multi-year 'emissions budget' target. In September 2025 Australia submitted its second NDC committing to a "[r]eduction in net national greenhouse gas emissions of 62–70% below 2005 levels by 2035, implemented as an emissions budget covering the period 2031–35" (Ref. 519). The *Climate Change Act* (Cth) also includes a legislated target to reduce Australia's net GHG emissions to zero by 2050.

GHG emissions occurring within Australia (i.e. including those from the petroleum activity, gas processing, and third-party end use of domestic gas) are managed under Australian regulatory mechanisms. The Wheatstone Project is subject to requirements established under the Commonwealth Safeguard Mechanism and WA EP Act approvals (Sections 7.2.3.2 and 7.2.3.6). There are GHG emission reduction requirements under both these regulatory mechanisms on a trajectory to net zero in 2050.

These regulatory requirements are incorporated into control measures below. Given there is sufficient regulatory mechanisms to monitor, mitigate and report on GHG emissions associated with the Wheatstone Project (to which the petroleum activity within scope of this EP is just a component of), there is no uncertainty regarding the appropriateness of emissions reporting and management.

CAPL is committed to conducting activities in an environmentally responsible manner and aims to implement best practice environmental management as part of a program of continuous improvement. This commitment to continuous improvement means that CAPL reviews the GHGMP and other control measures periodically and considers measures to avoid, reduce and offset emissions, including advances in technology and/or operational processes, and considers adoption of those technologies that offer a practicable way of reducing GHG emissions per tonne of LNG. Reviews also address matters such as the overall design and effectiveness of the

GHGMP, progress in environmental performance, changes in business conditions, and any relevant emerging environmental issues.

Given the GHG emissions associated with the petroleum activity (and relevant indirect consequences) detailed in this EP result in a *de minimis* contribution to the reduction of the global carbon budget, CAPL considers this aspect to comprise a lower-order impact (Table 5-3). As such, CAPL applied ALARP Decision Context A for this aspect. Notwithstanding this, CAPL have considered additional mitigation measures that could potentially lower the contribution to the reduction of the global carbon budget associated with the direct and indirect emissions arising from the activities covered in this EP.

Good practice control measures and source

Control measure	Source
EP Act approval	The Wheatstone Project was approved by the WA Minister for Environment on 30 August 2011 by way of MS 873 (and as amended; refer to Section 7.2.3.6). Condition 19 of MS 873 (as amended by MS 1201)requires the development and implementation of a GHGMP. The requirements of the Wheatstone LNG Plant GHGMP are described in Section 7.2.3.6. Under condition 19 CAPL must take measures to ensure that Net GHG Emissions do not exceed: • 14.95 Mt CO2-e per financial year until FY2025 • 14.55 Mt CO2-e per financial year for the period between FY2026 and FY2030 • 12.75 Mt CO2-e per financial year for the period between FY2031 and FY2035 • subsequent five-yearly reductions towards a net zero from FY2051 onwards. As acknowledged in Section 7.2.3.2, at the time of writing this EP, a section 46 process is underway for the Wheatstone Project. However, no changes to existing approval implementation conditions have been finalised or published, and as such, the existing conditions (i.e. including those related to the GHGMP) remain in place. CAPL will comply with all requirements for the management and reduction of GHG emissions that are in-force at any given time.
EPBC Act approval	The Wheatstone Project was approved by the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities on 22 September 2011 by way of EPBC 2008/4469 (and as amended; refer to Section 7.2.3.6).
National Greenhouse and Energy Reporting scheme	The Wheatstone Operations Facility is required to report GHG emissions under the NGER and Safeguard Mechanism schemes. From July 2016 emissions have been subject to a baseline in accordance with the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015. Under the 2023 Safeguard Mechanism reforms a facility's baseline will decline by 4.9% each financial year from FY2024 through to FY2030. The subsequent baseline decline rates will be set in 5-year blocks consistent with updates to Australia's NDC under the Paris Agreement. The Safeguard Mechanism production-adjusted baseline for the Wheatstone Operations Facility for FY2024 was 4.07 Mt CO_2-e (inclusive of the 4.9% decline). All Safeguard facilities' net emissions must be at or below baselines by the annual deadline. Responsible emitters of facilities that exceed or expect to exceed their baselines must manage their excess emissions (e.g. by surrendering offset credits). CAPL will comply with all NGER and Safeguard Mechanism requirements for the management and reduction of GHG emissions that are in-force at any given time.
Corporate governance	Chevron Corporation has set an aspirational target of net zero upstream Scope 1 and Scope 2 emissions by 2050, as well as 2028 reduction targets

	for two enterprise-level metrics: portfolio carbon intensity (PCI) and upstream carbon intensity (UCI) (Ref. 85, Ref. 531). The PCI metric developed by Chevron Corporation represents "the carbon intensity across the full value chain associated with bringing products to market, including Scope 3 emissions"[63](Ref. 85). It uses a representative value chain that includes emissions associated with bringing products to market, and emissions from their use. The Chevron Corporation PCI reduction target for 2028 (i.e. >5% reduction from 2016) are corporate level targets incorporating emissions from all Chevron operated assets and non-operated joint ventures. Within CAPL operational control, Scope 1 emissions[64], and Wheatstone gas and liquids production data (used to calculate estimated Scope 3 emissions) are compiled, assured, and reported by CAPL to Chevron Corporation annually for inclusion in the PCI metric on an equity basis. Management strategies, projects or improvements that serve to reduce Wheatstone emissions per unit production will contribute to the overall PCI metric. The UCI metric developed by Chevron Corporation are equity-based "emission intensity metrics for oil production, gas production, flaring, and methane" (Ref. 85). The Chevron Corporation UCI reduction targets for 2028 (i.e. 24 kg CO_2-e/boe [26% reduction from 2016] for gas production, 2 kg CO_2-e/boe [53% reduction from 2016] for methane, and 3 kg CO_2-e/boe for overall flaring [66% reduction from 2016]) are corporate level targets incorporating emissions from all Chevron operated assets and non-operated joint ventures. UCI includes Scope 1 and Scope 2 emissions. Within CAPL operational control, Wheatstone gas and liquids production, and Scope 1 emissions data[62], are compiled, assured, and reported by CAPL to Chevron Corporation annually for inclusion in the UCI metric, which is depicted on an equity basis. Management strategies, projects, or improvements that serve to reduce Wheatstone emissions per unit production will contribute to the overall UCI metric. The PCI and UCI metric are described and publicly reported within the *Corporate Sustainability Report* (e.g. Ref. 84, Ref. 93) and *Climate Change Resilience* (e.g. Ref. 85, Ref. 531). As identified in Table 2-6, Chevron Corporation is a corporate member of IPIECA (Table 2-6) and via that membership worked on the SDG Roadmap (Ref. 288). The *2021 Corporate Sustainability Report* describes Chevron's contributions to the impact opportunities identified within the Roadmap (Ref. 93). Chevron Corporation is a signatory to the *Methane Guiding Principles* (Table 2-6), and publicly reports on activity against each of the principles (Ref. 98). Chevron Corporation is also a signatory to the Aiming for Zero Methane Emissions Initiative (Table 2-6), and as a signatory will annually report on methane emissions. Management strategies, projects, or improvements for the Wheatstone Project, including those related to initiatives or commitments made by Chevron Corporation, may be identified and implemented via the 'emissions reduction review' process or adaptive management processes ('address uncertainty' and 'methane management) control measures.
Emissions reduction review	As a global company, Chevron operates in many jurisdictions that have enacted lower-carbon policies. CAPL regularly evaluates carbon emission reduction projects for opportunities to avoid, eliminate, or reduce emissions. Continual improvement processes, including but not limited to marginal abatement cost curve (MACC) evaluations, allow CAPL to rank emission reduction opportunities by their relative cost and abatement potentials. Given the sheer scale of the global challenge to address the global carbon budget, allocation of limited resources as efficiently and effectively as possible is critical to creating the greatest opportunity for success. Prioritizing efforts that curtail emissions at the lowest cost per tonne, irrespective of where or in which sectors those abatements occur, is the most economically efficient approach. The enterprise approach to drive

[63] Quote CCR (October 2021), at pg 38.

[64] There are currently no Scope 2 emissions associated with the Wheatstone LNG Plant (Ref. 86).

	emissions reductions in Chevron's portfolio is the marginal abatement cost curve (MACC) process. Like supply stacks, MACCs can enable a visualization of abatement opportunities, showing their relative cost and abatement potential on a similar basis. The relevant stages in the MACC process are: • opportunity identification by CAPL cross-functional team (with input from all Wheatstone Joint Venture participants) • opportunity development and submission by CAPL • enterprise-wide portfolio optimisation / selection for funding • implementation and reporting by CAPL • project tracking and knowledge sharing to ensure constant learning and continuous improvement. The process is ongoing with MACC project selection for funding occurring annually. The scope of the MACC process is activities within CAPL operational control (e.g. with respect to Wheatstone Operations, this includes the onshore facilities at Ashburton North). CAPL provide input on appropriate assumptions for decision analysis, upon which the US-based Carbon Reduction team apply both deterministic and probabilistic analysis to assess emissions reduction opportunities, consistent with Chevron Decision Analysis practices. The US-based Carbon Reduction team use portfolio theory and efficient frontier analysis to identify a portfolio of opportunities to progress across the technology spectrum, segments, business units, and geographies.
Marine Order 97: Marine Pollution Prevention – Air Pollution	Prior to commencement of IMR activities, Chevron's Offshore Vessel Information System (OVIS) assessment requirements within *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100) is used to verify that all vessels comply with Marine Order 97: Marine Pollution Prevention – Air Pollution (appropriate to vessel class) for emissions from combusting fuel, including: • Vessels will hold a valid International Air Pollution Prevention (IAPP) certificate and a current international energy efficiency (IEE) certificate • All vessels (as appropriate to vessel class) will have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI • Vessel engine nitrous oxides (NOx) emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI.
IMR vessel supply contract	While IMR vessels are not on permanent hire by CAPL, there is currently a contract in place with a vessel supplier. A new component within the 'request for tender' documentation for vessel supply is being developed by CAPL; this additional information will allow CAPL to incorporate an evaluation of CO_2 emissions within the tender evaluation process. It is expected that this new additional scope within the evaluation process will be in place for when the next IMR vessel supply contract is released for tender.
Legislative and other requirements review	CAPL is committed to continual improvement and adaptive management processes, and regularly monitors for revised or contemporary Australian regulatory and/or relevant international guidelines or standards in relation to GHG and carbon management. With specific reference to international shipping, CAPL is aware that the IMO is continually updating their mandatory measures to reduce emissions from international shipping (e.g. the 2023 IMO GHG Strategy; Ref. 533). The commercial arrangements governing all export shipping engaged in loading cargoes from the Wheatstone Marine Terminal, requires CAPL and their joint venture partners to procure ships that comply with international and Australian standards, so to the extent that a ship's Flag State, or AMSA as Port State, adopts IMO resolutions for measures to reduce emissions, these will apply to those third-party vessels (as well as Chevron Shipping vessels).

	Emissions from third party ships are not within the control of CAPL but have been included for completeness.
Address uncertainty	CAPL acknowledges the residual uncertainty associated with evaluation of environmental impacts and risks from the generation of GHG emissions. Uncertainty arises from advancements in climate science, revised forecasts in global energy mix, and subsequent changes in regulatory and policy requirements. These areas will evolve and new information will become available over the in-force period of this EP. As such, CAPL is committed to implementing an adaptive management process to ensure that impacts and risks associated with this aspect are continually reduced to ALARP and managed to acceptable levels. To address the residual uncertainty associated with impacts and risks from the generation of GHG emissions, the following adaptive management process will be implemented: • Monitor: – contemporary climate science in relation to Chevron Corporate climate risk management (as sourced from the periodic release of Chevron's *Climate Change Resilience* report; Section 9.5) – historical and forecast global energy mix and associated emissions, including the role of Wheatstone product types – revised or contemporary Australian regulatory and/or relevant international guidelines or standards (as per 'legislative and other requirements review' control measure) • Evaluate: – review the accuracy of, and validate, the estimated downstream indirect GHG emissions associated with the Wheatstone Project – review and validate the environmental impact and risk assessment for GHG emissions to ensure that GHG emissions are being reduced to ALARP and managed to an acceptable level • Adjust and implement: – identify improvements (e.g. to emission estimates, consequence evaluation, control measures, determination of acceptability, etc.) and implement changes as required. CAPL will implement this adaptive management process annually during the in-force period of this EP. The results of the annual monitoring and evaluation will be documented internally by CAPL. Where this annual review identifies improvements, any changes to the EP will be managed as per the MoC (Section 9.3.2.2) and Environment Plan review (Section 9.5) processes.
Emissions management opportunities	Chevron Corporation continues to take actions to help lower the carbon intensity of our operations while continuing to meet the world's demand for energy (Ref. 531).Chevron Corporation believes climate policy should be designed in a manner that enables the realisation of a lower carbon future at the least cost to society; and that a balanced approach to policy focused on affordability, reliability and environmental protection is needed to meet growing energy demand. CAPL monitors new and evolving opportunities to work with business partners to seek to advance its ambition of managing emissions, including through industry partnerships, research agreements, and commercial opportunities for business diversification into lower carbon energy solutions and/or complimentary technologies for improved efficiency. This is an ongoing process, with opportunities identified, assessed, and implemented on an ad-hoc basis. With any significant technology development, these opportunities may develop over a medium to long term timeframe (i.e. greater than the 5-year in-force periods of EPs).

Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
(Avoid) Use non-hydrocarbon powered vessels	If non-hydrocarbon (e.g. hydrogen) powered vessels were used for the program, CAPL could avoid emissions associated with fuel combustion from IMR support vessels. However, for activities under this EP, this avoidance of emissions is minimal (fuel combustion from IMR vessels was estimated at 0.002 Mtpa CO_2-e; Section 7.4.5.1) on both a project and global scale. Consequently, the benefit would be negligible.	No commercially viable vessels are currently available to implement the activities discussed in this EP. Consequently, the practicability of using vessels with alternative fuel sources to avoid direct emissions is not considered practicable.
(Reduce) Always use lower carbon intensive vessels	If vessels utilising a lower carbon intensive power source (e.g. dual-fuel, LNG, hybrid, battery-supported, etc.) were always used for the program, CAPL could reduce emissions associated with typical marine fuel combustion from IMR support vessels. However, for activities under this EP, this reduction of emissions is minimal ((fuel combustion from IMR vessels was estimated at 0.002 Mtpa CO_2-e; Section 7.4.5.1) on both a project and global scale. Consequently, the benefit would be negligible.	IMR vessels are supplied under an ongoing contract with CAPL. IMR vessels are considered vessels of opportunity from within the suppliers' fleet, with the selection based on the location, type, and availability of suitable vessels, for the individual IMR scope/s. Most IMR vessels are sourced from southeast Asia (e.g. Singapore) or within Australian waters; and have previously included diesel electric vessels (i.e. vessels with lower marine fuel consumption). Any delay to IMR schedules and operational activities due to waiting on the availability of a specific power-sourced vessel introduces the potential of production delays and safety costs that are disproportionate to the environmental benefit of reducing GHG emissions. In addition, sourcing vessels from other regions introduces greater transit emissions to relatively short-term IMR scopes. Consequently, it is not currently considered practicable to always use vessels with alternative power sources to reduce direct GHG emissions.
(Reduce) Use of electric powered vehicles	If electric powered vehicles were used for the program, CAPL could substitute emissions sources associated with fuel combustion from onshore IMR vehicles. However, for activities under this EP, this reduction of emissions is negligible (Section 7.4.5.1) on both a project and global scale. Consequently, the benefit would also be negligible.	The cost of implementing this control is grossly disproportionate to the level of risk reduction achieved. Consequently, the practicability of using electric vehicles to substitute emission sources for the activities covered in this EP is not considered practicable.
(Reduce) Use lower carbon intensive vessels	If non-hydrocarbon (e.g. hydrogen) powered vessels were used for the program, CAPL could avoid emissions associated with fuel	No commercially viable vessels are currently available to implement the activities discussed in this EP. Consequently, the practicability of

	combustion from IMR support vessels. However, for activities under this EP, this avoidance of emissions is minimal (fuel combustion from IMR vessels was estimated at 0.002 Mtpa CO_2-e; Section 7.4.5.1) on both a project and global scale. Consequently, the benefit would be negligible.	using vessels with alternative fuel sources to avoid direct emissions is not considered practicable.
(Avoid) Use renewable electricity to power the hydrocarbon system and Wheatstone LNG and Domgas Plants at Ashburton North	If a renewable energy source (e.g. solar) was available then the associated emissions from power generation from the gas turbines would be avoided. However, there are limitations for use of renewables associated with intermittency and the ability to store a large quantity of power, as well as a limited Development Envelope allowed for use at Ashburton North. The construction of any renewable energy source and supply would require an increase to the land disturbance allowed under existing environmental approvals and bring in new environmental impacts.	The cost of implementing this control is currently considered grossly disproportionate to the level of risk reduction achieved. Consequently, the practicability of using renewable energy sources to avoid emissions for the activities covered in this EP is not considered practicable.
(Reduce) Use of renewable electricity to reduce gas turbine power generation requirements	If a renewable energy source (either with or without battery storage) was available to supply some of the power requirements to the Wheatstone Platform and/or at the Wheatstone LNG and Domgas Plants at Ashburton North, then the associated emissions from power generation from gas turbines could be reduced. Acknowledging the limited space available either on the platform or within the existing Development Envelope at Ashburton North, and that the construction of any renewable energy source, storage, and supply would require an increase to the land disturbance allowed under existing environmental approvals and bring in new environmental impacts, the application of renewable power technology is considered for operating assets where appropriate.	The use of renewable energy sources to reduce power generation emissions at the platform or Ashburton North is not available for implementation at this time. However, Chevron are currently investigating the feasibility of renewable energy power projects that would allow a reduction in use of the existing gas turbine generators. As such, this cost-benefit analysis will be regularly re-assessed.
Likelihood and risk level summary		
Likelihood	N/A	
Risk level	N/A	
Determination of acceptability		
Principles of ESD	The impact associated with this aspect is a *de minimis* contribution to the reduction of the global carbon budget. The consequence associated with this aspect was evaluated as Incidental (6). One of the UN 2030 Agenda sustainable development goals (SDGs) is “ensure access to affordable, reliable, sustainable and modern energy for	

	all". Chevron is "inspired" by the UN SDGs and "seek[s] to achieve a more sustainable future" through its business operations (Ref. 84). The principle of inter-generational equity is considered to be met for the Wheatstone Project. Energy is fundamental to society, and access to reliable and affordable energy sources is interlinked with their ability to sustainably develop and maintain health, diversity, and productivity for future generations (Ref. 294). Natural gas provides both a reliable and affordable energy source and is one of the lower emission fossil fuels. The continued use of natural gas is in line with Australia's *Long-Term Emissions Reduction* Plan (Ref. 154), the natural gas from the Wheatstone Project is produced with a lower emissions intensity than other gas supplies on the North West Shelf, and the use of natural gas is considered to support the global transition to lower carbon intensive fuels. In addition, as described in Section 7.2.3.5, the current sales markets for the Wheatstone Project are countries that have also ratified the Paris Agreement and established their own NDCs for managing emissions. The Parties to the Paris Agreement acknowledge that climate change is a common concern of humankind and the Parties should consider their respective obligations, including intergenerational equity Article 2 of the Paris Agreement states that it "aims to strengthen the global response to the threat of climate change, in the context of sustainable development and the efforts to eradicate poverty, including by" … "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." (Article 2; Ref. 517). Consequently, the principle of intergenerational equity is considered to be met because the Wheatstone Project is consistent with regulated GHG emissions management in Australia and therefore Australia's efforts to meet their Pari Agreement obligations, and similarly international customer markets have Paris Agreement obligations to meet within their respective jurisdictions. The control measures identified and described above are considered to reduce this impact to ALARP. In particular, that GHG emissions from the Wheatstone Project will be managed to within a long-term average annual emissions estimate of ~4.65 Mtpa CO_2-e (Sections 7.2.3.4, 7.3.1.2, and 7.4.5.1), and also adaptively managed via the GHGMP (Ref. 86), and EP review process (Section 9.5), demonstrates CAPL's commitment to GHG management. Therefore, no further evaluation against the Principles of ESD is required.
Relevant environmental legislation and other requirements	Legislation and other requirements considered relevant to this aspect include: • *Environment Protection and Biodiversity Conservation Act 1999* (Cth) • *Environmental Protection Act 1986* (WA) • NGER Act • National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Cth) • *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 200) • *Conservation Advice Balaenoptera borealis Sei Whale* (Ref. 452) • *Conservation Advice Balaenoptera physalus Fin Whale* (Ref. 453) • *National Recovery Plan for the Southern Right Whale* (Ref. 150) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *Recovery Plan for the White Shark (Carcharodon carcharias)* (Ref. 219) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129). • *Approved Conservation Advice for Dermochelys coriacea (Leatherback Turtle)* (Ref. 183) • *Wildlife Conservation Plan for Seabirds* (Ref. 139)

	• *Wildlife Conservation Plan for Migratory Shorebirds* (Ref. 201).
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • *Climate Change Resilience* (Ref. 85) • *Wheatstone LNG Plant: Greenhouse Gas Management Plan* (Ref. 86).
External context	During stakeholder consultation, claims were received regarding GHG emissions and climate change. These claims have been addressed in the consequence evaluation above in conjunction with the controls in place to ensure that the impacts are managed to ALARP and acceptable levels. GHG emissions and climate change are a global phenomenon, with certain segments of society expressing heightened concern. Refer to the consequence evaluation for further detail on CAPL's assessment.
Defined acceptable level	Climate change is listed as a threat to protected matters under documents made or implemented under the EPBC Act. As a reduction in the global carbon budget may result in changes to global climate systems, CAPL has defined an acceptable level of impact such that it is not inconsistent with these documents. Specifically, the following action is defined within the *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 200) and the *Recovery Plan for Marine Turtles in Australia* (Ref. 129): • continue to meet Australia's international commitments to reduce GHG emissions As both of these species have the potential to be directly impacted by other environmental aspects arising from the activities detailed within this EP, CAPL has defined an acceptable level of impact as not materially or substantially contributing to Australia's GHG emissions, and as such, subsequently not preventing Australia meeting international GHG emission commitments. Australia is a signatory to the Paris Agreement and is currently committed to reducing GHG emissions by 43% below 2005 levels by 2030 and 62–70% below 2005 levels by 2035. Article 2 of the Paris Agreement states that it "aims to strengthen the global response to the threat of climate change, in the context of sustainable development and the efforts to eradicate poverty, including by" … "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." (Article 2; Ref. 517). Australia's *Future Gas Strategy* (Ref. 509) "establishes the role gas will play in the transition to net zero by 2050, securing affordable gas for Australia as we [Australia] move to a more renewable grid, and confirming our [Australia's] commitment to being a reliable trading partner" (Ref. 510). The strategy identifies that Australia will need gas through to 2050 and beyond; noting that the role of gas will change, and gas-related emissions must decline, as Australia transitions to net zero (Ref. 509). The Australian Government has also developed a *Net Zero Plan*, which sets out a pathway and actions to Australia's 2035 emissions reduction target and to net zero GHG emissions by 2050 (Ref. 535). Moreover, Australia has already reduced emissions by 25.9% in FY2023 compared to FY2005 (Ref. 520). By providing lower emission intensity energy exports (LNG) compared to other fossil fuels and by not materially or substantially contributing to Australia's GHG emissions, the Wheatstone Project is not inconsistent with Australia's global efforts to reach net zero by 2050. If Australia achieves its efforts to meet net zero by 2050, then it will contribute to global efforts to keep warming to the Paris Agreement target of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels". As discussed within the above consequence evaluation, based on the predicted emissions, the Wheatstone Project has a *de minimis* contribution

	to the reduction of the global carbon budget. Given that anthropogenic changes to the global climate system cannot be directly attributed to any one development or emission source or product, CAPL considers that the Wheatstone Project will meet the defined "acceptable level of impact as not materially or substantially contributing to Australia's GHG emissions, and as such, subsequently not preventing Australia meeting international GHG emission commitments" by managing their emissions to within long-term average annual emissions estimate of ~4.65 Mtpa CO_2-e (Sections 7.2.3.4, 7.3.1.2, and 7.4.5.1). Additionally, there are other regulatory management plans (i.e. the GHGMP), and other regulatory reporting mechanisms (i.e. the National Greenhouse and Energy Reporting scheme) in place to ensure that GHG emissions from the Wheatstone Project are adaptively managed in line with best practice and contemporary legislative and other requirements.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
Do not materially or substantially contribute to Australia not meeting its international GHG emissions commitments by managing direct and indirect GHG emissions associated with the Wheatstone Project in Australia* to within an emissions footprint of 4.65 Mtpa CO_2-e	**EP Act, EPBC Act, NGER and Safeguard Mechanism** CAPL will implement GHG emissions management, reductions, and reporting aligned with applicable requirements under the Commonwealth Safeguard Mechanism as well as approvals under the EP Act (WA) and EPBC Act (Cth), to the extent such requirements remain in-force and as amended from time to time, including: • Net GHG Emissions from the Wheatstone LNG Plant are within the limits set in condition 19.3 of MS 1201 • the Safeguard Mechanism baseline for the Wheatstone Operations Facility declines each financial year at rates as defined within the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 - responsible emitters of facilities that exceed or expect to exceed their baselines must manage their excess emissions through various means including the surrender of ACCUs or SMC Note: The requirements under this control measure may be amended from time to time, and this control measure will be revised to reflect any contemporary requirements.	Records confirm GHG emissions management, reductions, and reporting are aligned with applicable requirements under the Commonwealth Safeguard Mechanism as well as approvals under the EP Act (WA) and EPBC Act (Cth).
	Emissions reduction review CAPL will implement its emissions reduction review to identify emissions reduction opportunities (within its operational control) for the Wheatstone Project to be	Records show that annual review of emissions reduction opportunities was performed

	included in an enterprise-wide selection process	
	Emissions reduction review CAPL will measure and investigate >5% annual increases to absolute Scope 1 and Scope 2 emissions or intensity	Records show that Wheatstone asset total emissions (t CO_2-e) and upstream intensity (t CO_2-e/t LNG) are measured, root cause of annual increases >5% are investigated, and where practicable, improvement opportunities are evaluated through the MACC process
	Corporate governance CAPL will support Chevron Corporation's aspiration of managing global upstream emissions by implementing management strategies, projects, or improvements for the Wheatstone Project selected during an enterprise-wide selection process	Records show that when upstream emissions management strategies, projects, or improvements have been selected for the Wheatstone Project, these are implemented as soon as reasonably practicable (with consideration given to the scope, planned turnaround schedule, and scale of the activity)
	Corporate governance CAPL will report Scope 1 and Scope 2 emissions data from the Wheatstone Project to Chevron Corporation annually for inclusion in the calculation of its UCI metric	Records show that annual emissions data from the Wheatstone Project was provided to Chevron Corporation
	Corporate governance CAPL will support Chevron Corporate's aspiration of managing global portfolio emissions by implementing management strategies, projects, or improvements for the Wheatstone Project selected during an enterprise-wide selection process	Records show that when portfolio emissions management strategies, projects, or improvements have been selected for the Wheatstone Project, these are implemented as soon as reasonably practicable (with consideration given to the scope, planned turnaround schedule, and scale of the activity)
	Corporate governance CAPL will report Scope 1 and Scope 2 emissions data from the Wheatstone Project to Chevron Corporation annually for inclusion in the calculation of its PCI metric	Records show that annual emissions data from the Wheatstone Project was provided to Chevron Corporation
	Marine Order 97: Marine Pollution Prevention – Air Pollution Prior to commencement of IMR activities: • vessels will hold a valid International Air Pollution Prevention (IAPP) certificate and a current international energy efficiency (IEE) certificate • all vessels (as appropriate to vessel class) will have a Ship Energy Efficiency Management Plan (SEEMP) as per MARPOL 73/78 Annex VI	OVIS report / ABU Marine OE Inspection Checklist confirms vessels hold IAPP and IEE certificates, and a SEEMP is in place (as appropriate to class), and NOx emission levels comply with regulations

	• Vessel engine nitrous oxides (NOx) emission levels will comply with Regulation 13 of MARPOL 73/78 Annex VI.	
	IMR vessel supply contract The tender evaluation for the IMR vessel supply contract will include an evaluation of CO_2 emissions	Records indicate that tender evaluation for the IMR vessel supply contract included a consideration of vessel CO_2 emissions
Manage downstream indirect GHG emissions^ associated with Wheatstone Project	**Legislative and other requirements reviews** CAPL will undertake annual monitoring of revised or contemporary Australian regulatory requirements, and applicable international guidelines or standards, in relation to carbon management of downstream indirect GHG emissions	Records show that annual monitoring of revised or contemporary Australian regulatory requirements, and applicable international guidelines or standards, in relation to carbon management of downstream indirect GHG emissions was undertaken
	Address uncertainty CAPL will undertake an annual adaptive management process to address the residual uncertainty associated with impacts and risks from the generation of GHG emissions, specifically including: • monitoring the historical and forecast global energy mix and associated emissions, including the role of Wheatstone product types • review of the accuracy of estimated downstream indirect GHG emissions associated with the Wheatstone Project to validate the estimates used as the basis for the impact and risk assessment • review of the environmental impact and risk assessment for GHG emissions to ensure that GHG emissions are being reduced to ALARP and managed to an acceptable level.	Records show that an annual adaptive management process addressing downstream indirect GHG estimates was undertaken
	Address uncertainty If the above annual monitoring and evaluation identify improvement opportunities to manage downstream indirect GHG emissions, then CAPL will implement these changes within this EP in accordance with the MoC (Section 9.3.2.2) and EP Review (Section 9.5) processes	As required, records show that the MoC and/or EP review process were undertaken in response to any improvement opportunities related to the management of downstream indirect GHG emissions
	Emissions management opportunities CAPL will evaluate opportunities to partner with organizations that promote and address GHG	Records show that opportunities to promote and address GHG emissions reduction and carbon offsets in the LNG value chain, and advocating for LNG and natural gas

	emissions reduction and carbon offsets in the LNG value chain, and advocate for LNG and natural gas as fuels of choice	as fuels of choice have been evaluated annually
	Corporate governance CAPL will report production and emissions data from the Wheatstone Project to Chevron Corporation annually for inclusion in the calculation of its PCI metric	Records show that annual production and emissions data from the Wheatstone Project was provided to Chevron Corporation

* Where 'direct and indirect GHG emissions associated with Wheatstone Project refers to the direct emissions associated with activities within this EP (Sections 7.2.3.4 and 7.4.5.1) plus the indirect emissions from processing gas at the onshore facilities at Ashburton North (Section 7.2.3.6); i.e. emissions within CAPL operational control.

^ Where 'downstream indirect GHG emissions' refers to the emissions associated with transport, and third party end-use of LNG, condensate and domestic gas products.

7.4.6 Light emissions

Source

Activities identified as having the potential to result in light emissions are:

- navigation and operational lighting from vessels within the OA during IMR activities.

Potential impacts and risks

Impacts	C	Risks	C
Light emissions may result in: • localised and temporary change in ambient light.	5	A change in ambient light may result in: • attractant for light-sensitive species and in turn affect predator-prey dynamics	5

Consequence evaluation

Vessels will be present within the OA during the petroleum activity during IMR activities. The duration of vessel presence will vary, ranging from ~7-14 days (IMR activities) and up to 180 days for major repair activities (Sections 3.5). As activities under this EP may be undertaken 24 hours a day, lighting is required at night for navigation and to ensure safe operations when working on the vessels.

Localised and temporary change in ambient light

Monitoring undertaken by Woodside (Ref. 491) indicates that light density from navigational lighting on a MODU attenuated to below 1.0 lux and 0.03 lux at distances of ~300 m and ~1.4 km, respectively. Light densities of 1.0 lux and 0.03 lux are comparable to natural light densities experienced during deep twilight and during a quarter moon.

Lighting is expected to be the same or less on vessels within scope of this EP compared to a drill MODU, therefore the use of previous monitoring (Ref. 491) is considered a conservative approach to inform this consequence evaluation. As discussed in Section 3.6, there is potential for up to two vessels to operate within the OA. Where this may occur, vessels are often not in close proximity (i.e. spatial light exposure areas would not overlap). Where proximity does occur, the overlap is of limited duration (up to 2 days for non-routine IMR or re-supply activities) and may result in an insignificant increase beyond the modelled exposure distances.

Navigational and operational lighting is expected to be less on IMR and support vessels in comparison to a construction vessel. However, as a conservative approach for this consequence evaluation, CAPL estimates that vessel activities have the potential to result in temporary changes to ambient light no greater than a radius of ~1.4 km from the non-routine IMR or support vessels.

Given the ad hoc and short-term nature of proximal vessel operations and negligible cumulative light impacts, the scenario of two vessels working alongside each other is not discussed further.

Based on Woodside (Ref. 491), CAPL expects that the support vessels will result in temporary changes to ambient light emissions no larger than a radius of ~1.4 km. Operational and navigational lighting is expected to be similar in comparison to a MODU, therefore referencing this modelling is considered an appropriate approach for this consequence evaluation.

Given the limited extent of the change arising from navigational lighting, the impacts associated with a direct change in ambient light levels was determined to be Minor (5).

Acting as an attractant to light-sensitive species and in turn affecting predator–prey dynamics

There is no evidence to suggest that artificial light sources adversely affect the migratory, feeding, or breeding behaviours of cetaceans. Cetaceans predominantly use acoustic senses rather than visual sources to monitor their environment (Ref. 431), so light is not considered to be a significant factor in cetacean behaviour or survival.

Light-sensitive fauna (including reptiles, birds and fish) are the species most at risk from this aspect and thus are the focus of this evaluation. As identified in Section 4.3, several marine species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the OA. Several BIAs and/or critical habitat also overlap with the OA, including:

- Flatback Turtle (internesting buffer, nesting)
- Hawksbill Turtle (internesting buffer)
- Green Turtle (internesting critical habitat)

- Whale Shark (foraging)
- Lesser Crested Tern, Wedge-tailed Shearwater (breeding).

The *National Light Pollution Guidelines* (Ref. 169) indicate that a 20 km buffer or exposure area can provide a general precautionary light impact limit based on observed effects of sky glow on marine turtle hatchlings demonstrated to occur at 15–18 km (Ref. 300; Ref. 270) and fledgling seabirds grounded in response to artificial light 15 km away (Ref. 408).

Studies conducted between 1992 and 2002 in the North Sea confirmed that artificial light was the reason that birds were attracted to and accumulated around illuminated offshore infrastructure (Ref. 327) and that lighting can attract birds from large catchment areas (Ref. 485). These studies indicate that migratory birds are attracted to lights from offshore platforms when travelling within a radius of 5 km from the light source, but their migratory paths are unaffected outside this zone (Ref. 427). Although the OA (associated with the nearshore trunkline) is located adjacent to the coast, vessel activities are expected to be conducted at least 1 km from the coast given the trunkline is installed under the seabed via a microtunnel. Although light emissions have the potential to expose the coast (i.e. within ~1.4 km from the vessel), given the magnitude of the activities covered under this EP, it is not expected that coast would be exposed for a prolonged period of time, or frequently, and thus any impacts would be limited. For the remainder of the OA, any artificial emissions from the vessel that attract a small number of individual seabirds are not expected to result in any impact to the individual or to the greater population.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 201) identifies light emissions as a key threat because it can disrupt critical behaviours, such as nesting, hatchling orientation, sea finding, and dispersal behaviour. The *Recovery Plan for Marine Turtles in Australia* (Ref. 201) defines the critical habitat for nesting for each species at a stock level. The closest nesting critical habitats to the OA include coastal islands which have been identified as nesting habitat for Flatbacks, Greens, and/or Hawksbill turtles (Ref. 201). The closest island to the trunkline is Ashburton Island, ~1.8 km from the trunkline. As light emissions from support vessels are expected to result in a change to ambient conditions up to a maximum of ~1.4 km from the vessel, no island areas (and therefore no adult nesting turtles, or turtle hatchlings) are expected to be exposed.

Flatback Turtles are also known to nest on Ashburton Delta, on the mainland near Project infrastructure (Ref. 276). Although the OA (associated with the nearshore trunkline) is located adjacent to the coast, vessel activities are expected to be conducted at least 1 km from the coast given the trunkline is installed under the seabed via a microtunnel. Although light emissions have the potential to expose the coast (i.e. within ~1.4 km from the vessel), given the magnitude of the activities covered under this EP, it is not expected that coast would be exposed for a prolonged period of time, or frequently, and thus any impacts would be limited.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 201) defines the critical habitat for internesting as a distance seaward from nesting critical habitat of 60 km for Flatbacks and 20 km for other marine turtle species. As described in Section 3.4.1.3, there are no planned maintenance or repair activities for the nearshore trunkline during operations. As such, any IMR activities for the nearshore trunkline are associated with inspection activities only. Although light emissions have the potential to expose (i.e. within ~1.4 km from the vessel) ocean areas that may be used for internesting, given the magnitude of the activities covered under this EP, it is not expected that these would be exposed for a prolonged or frequent, or frequent, periods of time and thus any impacts would be limited.

Anthropogenic disturbance and artificial lighting is identified as a threat within the *Wildlife Conservation Plan for Migratory Shorebirds* (Ref. 201). However, only a small number of threatened or migratory bird species would be expected to be present in this area. Light emissions that attract a small number of individual seabirds are not expected to result in any impact to the individual or to the greater population.

Artificial light may result in varied ecological changes to fish, including changes to predatory behaviour and abundance (Ref. 39, Ref. 323), altering hatching success (Ref. 235), acting as an attractant for plankton (Ref. 302), or altering circadian behavioural rhythms (Ref. 323).

The Whale Shark BIA is associated with foraging behaviours during northward migration from the Ningaloo Reef seasonal aggregation area, along the 200 m isobath during July to November (Ref. 454). Light has not been identified as a key threat for the Whale Shark (Ref. 454). Although light emissions have the potential to expose (i.e. within ~1.4 km from the vessel) ocean areas that may be used by Whale Sharks during their northern migration, it is not expected that they would be exposed for prolonged or frequent periods of time due to the IMR activities under this EP, and thus any impacts would be limited.

Because light emissions have the potential to cause temporary impacts to a small number of protected species over the course of the activity, CAPL has ranked the consequence associated this impact as Minor (5).		
ALARP decision context justification		
Offshore commercial vessel operations and subsequent light emissions arising from these activities are commonplace in offshore environments nationally and internationally. During stakeholder consultation, no objections or claims were raised regarding light emissions arising from the activity. The impacts and risks associated with light emissions are well understood, and considered lower-order impacts and risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.		
Good practice control measures and source		
Control measure	**Source**	
Marine Standard	Chevron's *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100) ensures that various legislative requirements are met. This includes ensuring that lighting sufficient for navigational, safety and emergency requirements are met, as appropriate to vessel class.	
IM Plans	The type of inspections of the hydrocarbon system will be undertaken in accordance with the IM Plans (Ref. 493, Ref. 103). Inspections will be undertaken with a frequency determined using a risk-based approach; and the frequency of maintenance and repair activities will be dependent on the results of inspections (Section 3.4.1). Where practicable, planned IMR activities will be scheduled to avoid critical habitat within turtle nesting season (September to March). If scheduling of activities outside these spatial and temporal requirements is not practicable, an activity-specific HIRA assessment will be conducted.	
Activity-specific HIRA	Where IMR activities are required to be undertaken at night within critical habitat and during Flatback Turtle nesting season (September to March), an activity-specific HIRA will be conducted to identify and manage risks to marine turtles. If potential significant activity-related stressors to marine turtles are present, these management measures will be considered where practicable: • vessels working at night within critical habitat and during turtle season will be required to reduce lighting to the minimum required for safe operations • no 'lit' vessel will be moored within 1.5 km of nesting beach buffer zones (as defined in the *Wheatstone Conservation Significant Marine Fauna Interaction Management Plan* [Ref. 69]).	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	Due to the nature and scale of this petroleum activity vessel activities are predominantly occurring within offshore waters away from the coastline. As such the likelihood of exposing sensitive receptors resulting in the identified consequence was considered Remote (5).	
Risk level	Very low (10)	
Determination of acceptability		
Principles of ESD	The impact associated with this aspect is disruption to light-sensitive species' behaviour, which given the location, is not considered as having the potential to affect biological diversity and ecological integrity. The impact associated with this aspect is Incidental (6).	

	Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered for this aspect include: • *Navigation Act 2012* (Cth) • *National Light Pollution Guidelines* (Ref. 169) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129) • *Wildlife Conservation Plan for Migratory Shorebirds* (Ref. 201) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *National Recovery Plan for albatrosses and petrels (2022)* (Ref. 156).	
Internal context	CAPLs environmental performance standards / procedures considered relevant to this aspect include: • Wheatstone Conservation Significant Marine Fauna Interaction Management Plan (Ref. 69) • IM Plans (Ref. 493, Ref. 103) • *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100).	
External context	During stakeholder consultation, no objections or claims were raised regarding light emissions arising from field support activities.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan. However, given that light pollution is listed as a threat to protected matters under documents made or implemented under the EPBC Act, CAPL has defined an acceptable level of impact such that it is not inconsistent with these documents. The *Recovery Plan for Marine Turtles in Australia* (Ref. 129) specifies the following relevant action: • artificial light within or adjacent to habitat critical to the survival of marine turtles will be managed such that marine turtles are not displaced from these habitats. No other specific relevant actions were identified within other documents implemented under the EPBC Act. The OA does intersect with critical habitat as identified within the Recovery Plan for Flatback, Green, and Hawksbill Turtles (Table 4-10). Therefore, CAPL has defined an acceptable level of impact as no displacement of marine fauna from critical habitat.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
Avoid displacement of marine fauna from critical habitat during nesting seasons from petroleum activities	**Light management** Vessels working at night will be required to: • reduce external lighting to the minimum required for safe operations and navigation • where practicable, operational lighting directed downwards to working deck area	Inspection records during night operations confirm only minimum lighting for safe operations and navigation is in use and, where practicable, operational lighting is directed downwards to working deck area.
	IM Plans Where practicable, planned IMR activities will be scheduled to avoid	Records show that planned IMR activities were scheduled to avoid critical habitat during

	critical habitat within turtle nesting season (September to March)	nesting season, where practicable
	Activity-specific HIRA Where IMR activities are required to be undertaken at night within critical habitat and during turtle nesting season (September to March), an activity-specific HIRA will be undertaken prior to IMR activity commencing	Records show that activity-specific HIRA undertaken prior to IMR activity commencing
	Activity-specific HIRA Where required, these management measures will be considered where practicable: • vessels working at night within critical habitat and during turtle nesting season will be required to reduce lighting to the minimum required for safe operations • no 'lit' vessel will be moored within 1.5 km of nesting beach buffer zones (as defined in the Wheatstone Conservation Significant Marine Fauna Interaction Management Plan [Ref. 292]).	Inspection records during night operations within critical habitat and during nesting season confirm only minimum lighting for safe operations is used
		Vessel records during night operations within critical habitat and during nesting season confirm mooring >1.5 km from nesting beach buffer zones

7.4.7 Underwater sound

Source

Activities identified as having the potential to result in underwater sound are:

- vessels or helicopter operations within the OA.

These activities result in the emission of continuous non-impulsive sounds.

Potential impacts and risks

Impacts	C	Risks	C
Underwater sound emissions may result in: • localised and temporary change in ambient underwater sound.	5	A change in ambient underwater sound may result in: • behavioural disturbance • auditory impairment, temporary threshold shift (TTS), permanent threshold shift (PTS), recoverable or non-recoverable injury to marine fauna	5

Consequence evaluation

Localised and temporary change in ambient underwater sound

Anthropogenic underwater sound emitted during the field support (vessel or helicopter) activities will result in a temporary change in local ambient sound levels. The duration of vessel presence will vary, ranging from ~7-14 days (IMR activities) and up to180 days for major repair activities (Sections 3.5).

Underwater broadband ambient sound spectrum levels range from 45–60 dB re 1 µPa in quiet regions (light shipping and calm seas) to 80–100 dB re 1 µPa for more typical conditions, and >120 dB re 1 µPa during periods of high winds, rain or 'biological choruses' (many individuals of the same species vocalise near simultaneously in reasonably close proximity to each other) (Ref. 279). Low-frequency ambient sound levels (20–500 Hz) are frequently dominated by distant shipping plus some great whale species. Light weather-related sounds will be in the 300–400 Hz range, with wave conditions and rainfall dominating the 500–50,000 Hz range (Ref. 279).

Studies of underwater sound generated from propellers of offshore vessels when holding position indicate highest measured SPL up to 137 dB re 1 µPa and 120 dB re 1m Pa at 405 m and ~3-4 km from the sound source (Ref. 330). When underway at ~12 knots vessel sound of 120 dB re 1 µPa was recorded at 0.5–1 km (Ref. 330).

Sound emitted from helicopter operations is typically below 500 Hz (Ref. 404). The peak-received level diminishes with increasing helicopter altitude, but the duration of audibility often increases with increasing altitude. Estimates of SPL for helicopters range 149–162 dB re 1 µPa (Ref. 405 Ref. 477). Richardson et al. (Ref. 405) report that helicopter sound was audible in air for four minutes before it passed over underwater hydrophones, but detectable under water for only 38 seconds at 3 m depth, and 11 seconds at 18 m depth.

Given the details above, the consequence of vessel or helicopter operations causing a change in ambient underwater sound has been assessed as Minor (5) as it will result in a localised and short-term environmental impact limited to the duration of vessel or helicopter operations and returning to ambient levels on completion.

Exposure Criteria

Very high–frequency (Kogia spp.), high frequency (dolphins, toothed whales, beaked whales and bottlenose whales [e.g. Indo-Pacific Humpback and Spotted Bottlenose dolphins, Killer Whale, Sperm Whale]) and low-frequency (baleen whales [e.g. Blue, Bryde's, Fin, Humpback, Sei, Antarctic Minke whales]) cetaceans have been identified as having the potential to be present within the OA. Exposure criteria for these species have been adopted from NMFS (Ref. 347) and are provided in Table 7-6.

Exposure criteria for marine turtle TTS and PTS onset have been adopted from Accomando et al. (2025) (Ref. 5) and are provided in Table 7-7. Behavioural response criteria for marine turtles are adopted from Popper et al. (2014) and consider sound emissions to provide a high risk in the near field (within tens of metres), moderate in the intermediate (hundreds of metres) and low in the far field (thousands of metres).

Noise exposure criteria for fish have been adopted from Popper et al. (2014) (Ref. 396) and are provided in Table 7-8.

Table 7-6: Noise exposure criteria (continuous non-impulsive sound) for cetaceans

Cetacean Hearing Group	PTS onset thresholds (received level) (Ref. 360)	TTS onset thresholds (received level) (Ref. 347)	Behavioural Response (Ref. 347)
Low–frequency cetaceans	$L_{E, 24h}$: 197 dB	$L_{E, 24h}$: 177 dB	L_{pk}: 120 dB
High–frequency cetaceans	$L_{E, 24h}$: 201 dB	$L_{E, 24h}$: 181 dB	L_{pk}: 120 dB
Very High–frequency	$L_{E, 24h}$: 181 dB	$L_{E, 24h}$: 161 dB	L_{pk}: 120 dB

Table 7-7: Noise exposure criteria (continuous non-impulsive sound) for marine turtles

PTS onset thresholds (received level) (Ref. 5)	TTS onset thresholds (received level) (Ref. 5)	Behavioural Response (Ref. 396)
$L_{E, 24h}$: 198 dB	$L_{E, 24h}$: 178 dB	—

Table 7-8: Noise exposure criteria (continuous non-impulsive sound) for fish

Hearing Group	Recoverable Injury (Ref. 396)	TTS onset thresholds (received level) (Ref. 396)
Fish without swim bladders	—	—
Fish with swim bladders (involved in hearing)	$L_{E, 48h}$: 170 dB	$L_{E, 12h}$: 158 dB

Continuous Non-impulsive sound (vessel and helicopter operations)

Acoustic modelling undertaken by JASCO on behalf of CAPL for other projects on the NWS, with vessels and environments comparable to the activities within this EP and OA, have been used to inform potential sound exposures to ensure a comprehensive assessment of potential impacts (Ref. 474 and Ref. 319). Specifically, modelling undertaken for a single IMR vessel was considered representative of the field support activities expected to be carried out under this EP. Additionally, modelling for a large offshore construction vessel, a cable lay vessel, was considered analogous to the ASV that may be required for major repair campaigns. The duration of vessel presence will vary, ranging from ~7-14 days (IMR activities) and up to180 days for major repair activities (Sections 3.5).

The modelling also provides an indication of cumulative sound exposures by considering sound emissions from multiple sources at a single location. In reality, as multiple sound sources will occur at a distance from each other, the model exaggerates near field sound levels and is therefore considered highly conservative, however, on the basis that multiple vessels have the potential to be within the OA during IMR activities, CAPL acknowledge the potential for cumulative sound emissions..

The outcomes of this modelling are summarised throughout the subsequent risk and impact assessment.

Underwater sound frequencies from helicopter operations are expected to be below 500 Hz (Ref.405). Based on a study by Richardson *et al.* (Ref. 405), audible underwater sound emissions from helicopter operations are limited to a very short time period (~ 38 seconds) during take-off or landing, resulting in a broadband source level of up to 162 dB re 1 µPa @ 1 m.

Marine Mammals

Behavioural disturbance

Acoustic modelling of sound emissions from a single IMR vessel on the continental shelf (Ref. 474). predicted a maximum distance of 3.76 km to the behavioural disturbance threshold for marine mammals (Table 7-6). In the event that an ASV is required to be used at the platform location, modelling for an analogous construction vessel predicted a maximum distance of 3.77 km to the behavioural disturbance threshold for marine mammals.

Based on PMST searches (appendix e), no biologically important areas and associated behaviours were identified for high and very-high frequency cetaceans within the OA, although it is anticipated that the migratory presence of high and very-high frequency cetaceans may be within the OA. There is no evidence of high-site fidelity for high and very-high frequency cetaceans within

the OA (i.e. the OA does not contain known breeding, calving and significant foraging grounds), as a result, high and very-high frequency cetaceans are expected to be highly mobile and may transit through in low numbers (Section 4.3.3.1). As such the following consequence evaluation focusses on low-frequency cetaceans.

Low-frequency cetaceans, specifically Humpback and Pygmy Blue Whales, are known to be present within the OA during peak migration periods:

- The OA overlaps (southern section of the trunkline) a migration BIA for Humpback Whales. Northbound Humpback Whales are expected to pass the OA, peaking in late July (Ref. 295). An increase in southerly migrating individuals may be observed passing the OA (i.e. between the North West Cape and the Montebello Islands) around November (Ref. 295).
- The OA overlaps with the western edge of the Pygmy Blue Whale BIA, and those areas identified as 'most important' and 'suitable' areas for Pygmy Blue Whale migration (Section 4.3.3.1.2; Figure 4 22). Northbound Pygmy Blue Whales are expected to pass the OA (i.e. highest densities of detections transiting through the Montebello Islands) during the months of June and July (Ref. 144). Southbound Pygmy Blue Whales are expected to pass the OA (i.e. highest densities of detections transiting through the Montebello Islands) occurring from November–December (Ref. 331). However it is noted that OA overlaps a very limited area of the Pygmy Blue Whale migration BIA.

Underwater sound emissions associated with the field support activities are generally expected to occur over periods of ~7–14 days, depending on the scope of activities (refer to Section 3.5). Major repairs activities may occur at intervals of 5-10 years (if at all) and may last up to 180 days (Section 3.5) .

Review of modelling predictions for low-frequency cetaceans found the conservative area for behavioural response to low-frequency cetaceans to be 3.77 km from the source (i.e. maximum horizontal distance predicted for ASV operations). Cetaceans (including low frequency cetaceans) are expected to display avoidance behaviours such as changing swimming direction and speed so that animals may avoid the ensonified area generated by vessels in the OA (Ref. 537). As such, a whale avoiding the source will alter its path by kilometres at most over a migration of many thousands of kilometres (Ref. 293). Therefore, this level of behavioural avoidance within the Humpback Whale or Pygmy Blue Whale migration BIA is highly unlikely to alter the overall energy budget of migrating whales.

Estimates of SPL for helicopters range 149–162 dB re 1 µPa (Ref. 405; Ref. 477), which is above the NMFS criterion for behavioural disturbance (Ref. 360). However, the spatial and temporal extent of the potential exposure to underwater sound from helicopters is limited (e.g. 38 seconds at 3 m depth, and 11 seconds at 18 m depth; Ref. 405). The helicopter operations covered under this EP (i.e. crew transfers for longer IMR campaigns) are also expected to be infrequent. Therefore, given the limited nature of the exposure, potential impacts from helicopters on cetacean behaviour are not evaluated further.

Given the open-water environment, the close distance to the vessel before any behavioural response is likely to occur, and the mobile nature of cetacean species, only localised short-term behavioural impacts to transient individuals have the potential to arise from these activities and have therefore been evaluated as Minor (5).

TTS and PTS

Acoustic modelling of sound emissions from a single IMR vessel on the continental shelf (Ref. 474) predicted a maximum distance of 0.63 km and 0.02 km and 0.28 km to the frequency weighted SPL_{24} TTS threshold for low–, high– and very high–frequency cetaceans respectively. The modelling predicted a maximum distance of 0.04 km and 0.03 km to the PTS threshold for low and high frequency cetaceans. The PTS threshold was not predicted to be met for very high–frequency cetaceans (Ref. 319).

Acoustic modelling for an analogous vessel to the proposed ASV indicate a maximum distance of up to 20 m for potential onset of PTS for low and very high–frequency cetaceans. The PTS threshold was not predicted to be met for high frequency cetaceans. The modelling predicted a maximum distance of up to 160 m, 20 m and 40 m for potential onset of TTS for low, high and very high-frequency cetaceans respectively (Ref. 319).

The relevant values and sensitivities within the OA with the potential to be exposed to underwater sound include:

- Low frequency cetaceans (e.g. baleen whales) and high frequency (e.g. toothed whales, dolphins) that are listed as threatened and/or migratory under the EPBC Act
- Migration BIA for Pygmy Blue Whales
- Migration BIA for Humpback Whales

Note that the SEL_{24h} is a cumulative metric that assumes a receptor is consistently exposed to the relevant noise effect criteria for a 24-hour period. Specifically, a Pygmy Blue Whale would need to remain within close proximity (40 m or 630 m) to the sound source, for an extended period (24 hours) for PTS or TTS onset (respectively) to occur and this is not credible. Given that behavioural responses are predicted at distances much larger (in scales of kilometres) than those predicted for TTS or PTS onset it is unlikely that marine mammals will remain within the immediate proximity of vessels for extended durations so that auditory impairment would occur. As such, the risk of auditory impairment is not considered credible, and has not been evaluated further.

The helicopter operations covered under this EP (i.e. crew transfers) are expected to be infrequent. Therefore, exposure to continuous sound from this source for an extended period (e.g. 24 hours) is not credible, and comparison against an accumulated sound exposure levels is not relevant, and no further evaluation is required.

Marine Reptiles

Sea snakes

The threatened Short-nosed Sea Snake or Leaf-scaled Sea Snake are not expected to be present within the OA given known habitat preferences for shallow water and reef habitat; underwater sound has also not been identified as a threat for either species (Ref. 213; Ref. 182). Other EPBC marine listed sea snake species may occur in broader habitats within the NWMR, however noise pollution has not been identified as a pressure for sea snake species (Ref. 218). As such, underwater sound is not considered to be a significant factor in sea snake behaviour or survival.

Marine Turtles-Behavioural disturbance

Behavioural response criteria for marine turtles are adopted from Popper et al. (2014) and consider sound emissions to provide a high risk in the near field (within tens of metres), moderate in the intermediate (hundreds of metres) and low in the far field (thousands of metres).

Although the OA overlaps the Flatback Turtle internesting BIA, Whittock et. al. (Ref. 483) reported that Flatback Turtles preference habitats within proximity of the coast and at relatively shallow depths during the internesting periods. Specifically, during the study, a maximum distance from the nearest coast and maximum water depth of 27.8 km and <44 m respectively was recorded, with the mean maximum distance away from the nearest coast and mean water depth being less than 6.1 km and <10 m respectively (Ref. 483). This suggests that although the OA overlaps the Flatback turtle internesting BIA, due to the distance offshore and increasing water depths it would be very unlikely that turtles would be aggregating within the majority of the OA (noting that higher presence may be expected within the nearshore OA located adjacent to the mainland coast near the shore crossing). Consequently, only a small number of transient marine turtles are expected to be present.

If individual marine turtles do come within close proximity (i.e. within tens of metres) to a vessel, the behavioural responses are expected to be limited to increased swimming activity / avoidance thus impacts would be temporary in nature. Consequently, only short-term behavioural impacts to individuals have the potential to arise from these activities and have therefore been evaluated as Minor (5).

Marine Turtles-TTS and PTS

Acoustic modelling undertaken for a single IMR vessel on the continental shelf (Ref. 474) indicated a maximum distance of 0.43 and 0.04 km respectively for frequency weighted SEL_{24} TTS and PTS threshold criteria to be met.

Although the OA overlaps the Flatback Turtle internesting BIA, Whittock et. al. (Ref. 483) reported that Flatback Turtles preference habitats within proximity of the coast and at relatively shallow depths during the internesting periods. Specifically, during the study, a maximum distance from the nearest coast and maximum water depth of 27.8 km and <44 m respectively was recorded, with the mean maximum distance away from the nearest coast and mean water depth being less than 6.1 km and <10 m respectively (Ref. 483). This suggests that although the OA overlaps the Flatback turtle internesting BIA, due to the distance offshore and increasing water depths it would be very unlikely that turtles would be aggregating within the majority of the OA (noting that higher presence may be expected within the nearshore OA located adjacent to the mainland coast near the shore crossing). Consequently, only a small number of transient marine turtles are expected to be present.

Note that the SEL_{24h} is a cumulative metric that assumes a receptor is continuously exposed to the relevant noise effect criteria for a 24-hour period. Specifically for marine turtles, this requires them to remain within 0.43 km from the sound source for at least a 24-hour period before TTS auditory impairment may occur, and within 40 m from the sound source for at least a 24-hour period before PTS auditory impairment may occur. Because marine turtles (if present) are expected to be transitory through the area, the risk of PTS or auditory impairment injury is not

considered credible as it requires turtles to remain in the immediate vicinity (~40 m) of the vessel over a 24-hour period and has not been evaluated further. If individual marine turtles do come within close proximity (i.e. <0.43 km) to a vessel, the behavioural responses are expected to be limited to increased swimming activity / avoidance thus impacts would be temporary in nature.

Given the short duration of field support activities (7-14 days), the expected transient behaviours of marine turtles (if present), only short-term behavioural impacts to individuals have the potential to arise from these activities and have therefore been evaluated as Minor (5).

Fish including sharks and rays

Behavioural disturbance

Non-impulsive sound sources have been identified as a moderate or high risk of causing behavioural changes, and a high risk of causing masking changes, within the near and intermediate vicinity of a sound source for all fish groups, including eggs and larvae (Table 7-8); these risks decrease with increasing distance from the source. Non-impulsive sound of any level that is detectable by fish can mask signal detection and thus may have a pervasive effect on fish behaviour. However, the consequences of this masking and any attendant behavioural changes for the survival of fishes are unknown (Ref. 396). It is expected that most fish (including sharks and rays) will exhibit avoidance behaviour from a sound source if it reaches levels that may cause behavioural or physiological effects.

As identified in Section 4.3.3.3, several fish species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the OA. A foraging BIA for the Whale Shark partially overlaps with the OA (Figure 4-26).

Whale Shark migration along the WA coast occurs mainly between July and November (Section 4.3.3.3.1). There is the potential for Field Support Activities to overlap with the Whale Shark migration period and it is expected that the potential effects to Whale Sharks associated with underwater sound will be the same as for other pelagic fish species.

Pelagic fish species are likely to be transient through the OA. If the fish are within the immediate vicinity of the sound source, behavioural responses are expected to be limited to an initial startle reaction before either returning to normal, or resulting in the fish moving away from the area (Ref. 473).

Demersal fish species may reside around existing subsea infrastructure (i.e. if it is providing suitable artificial habitat) within the OA. However, given the water depths within most of the OA, the sound levels at the seabed are expected to be below impact thresholds.

Consequently, only localised short-term behavioural impacts to transient individuals have the potential to arise from these activities and have therefore been evaluated as Minor (5).

TTS and Recoverable injury

Popper et al. (Ref. 396) propose noise levels criteria for fish with swim bladders involved in hearing at 170 dB re 1 µPa over 48 hours for a recoverable injury, and 158 dB re 1 µPa over 12 hours for TTS. For fish species with a swim bladder involved in hearing, acoustic modelling indicates that the maximum radial distance in any direction from the source to 170 re 1µPa^2.s and 158 dB 1µPa^2.s was <0.010 km and 0.097 km respectively (Ref. 328).

Pelagic fish species are likely to be transient through the OA. Given their transient nature, these fish are not expected to remain within close proximity (~10–100 m) of a sound source for extended periods (12–48 hours) such that an injury due to continued sound exposure would occur.

Demersal fish species may reside around existing subsea infrastructure (i.e. if it is providing a suitable artificial habitat) within the OA. However, given the water depths within most of the OA, the sound levels at the seabed are expected to be below impact thresholds and thus exposure to demersal species is not expected.

On this basis, neither TTS nor recoverable injury to fish are considered credible, and have therefore not been considered further.

ALARP decision context justification

Offshore commercial vessel operations are commonplace and well-practised nationally and internationally. The application of control measures to manage impacts and risks arising from this aspect are well defined, understood by the industry, and are considered standard industry practice.

During stakeholder consultation, no objections or claims were raised regarding underwater sound emissions arising from the activity.

Although some species that are known to be sensitive to underwater sound have the potential to be exposed to underwater noise above exposure criteria during these activities, the impacts and

risks arising from underwater sound emissions are considered lower-order impacts and risks in accordance with Table 5-3.

As such, CAPL applied ALARP Decision Context A for this aspect. Notwithstanding this, CAPL has also considered additional mitigation measures that could potentially lower the risk to marine fauna with BIAs that intersect the OA including Pygmy Blue Whales, Humpback Whales and Whale Sharks.

Good practice control measures

Control measure	Description
EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans	The requirements to manage interactions between vessels and cetaceans are detailed in the EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans. These regulations describe strategies to ensure cetaceans are not harmed during offshore interactions with people. By implementing this control measure, potential impacts are reduced by maintaining a minimum separation distance between cetaceans (and applied for Whale Sharks, marine turtles, dugongs) and vessels. It also reduces helicopter noise levels received at the sea surface during flight by maintaining minimum separation distance between the cetaceans (and applied for Whale Sharks, marine turtles and dugongs) and helicopter.
Biodiversity Conservation Regulations 2018	The requirements to manage interactions with marine fauna (including cetaceans, Whale Sharks, and dugongs) and relevant separation distances are detailed in the WA Biodiversity Conservation Regulations 2018. By implementing these control measures and managing interactions with marine fauna near the vessels or any site surveys, the potential impacts from underwater sound are limited.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
Limiting the duration and frequency of IMR activities during peak migration periods for Pygmy Blue Whales and Humpback Whales	Adopting this control would reduce the risk of effects from non-impulsive underwater sound to Pygmy Blue Whales and Humpback Whales. Notably, the predicted peak migration periods in the Montebello Island region for Pygmy Blue Whales are June-July (northern) and November–December (southern), and for Humpback Whales is peaking in late July (northern) and early-September (southern) (Table 4-16). Scheduling the petroleum activity to avoid the predicted peak whale seasons has the potential to result in the petroleum activity coinciding with predicted peak periods for other marine fauna (Table 4-16).	The cost of implementing temporal restrictions is considered grossly disproportionate to the negligible environmental benefit (and no change in residual risk) they may provide for Pygmy Blue Whales and Humpback Whales. Therefore, the control measure has not been adopted for use.

	Given the low number of vessels within the OA and other adopted controls, any changes to activity schedules are not expected to result in a reduction of residual risk level.	
Use of routine marine fauna observations during night-time or poor visibility for vessel-based activities	Use of marine fauna observers (MFOs) may be used to assist in detecting the presence of individuals or groups of cetaceans during daylight hours under good visibility conditions only. Use of acoustic monitoring (e.g. passive acoustic monitoring [PAM]) is most effective for detecting odontocetes (toothed cetaceans, e.g. orcas, dolphins, Sperm Whales) that produce clicks and whistles that can be more readily differentiated from low frequency vessel noise, than low frequency calls by baleen whales (e.g. Humpback, Pygmy Blue, Fin, Sei, Bryde's Whales). As such PAM is not considered to be appropriate for use in detecting baleen whales such as Pygmy Blue Whales.	The significant additional cost of using MFOs or PAM operators on board for the duration of an IMR vessel activity when there may be few or no detections of the targeted low-frequency whale species (i.e. Pygmy Blue Whale) during night-time or poor visibility conditions is considered grossly disproportionate to any limited environmental benefit. Therefore, control measure has not been adopted for use.
Adaptive management—shutdown zones for marine fauna for slow moving or stationary vessels under DP	Underwater sound that radiates from vessels is produced mainly by propeller and thruster cavitation, with a smaller fraction produced by sound transmitted through the hull, such as by engines, gearing, and other mechanical systems (Ref. 319). Sound levels tend to be the highest when thrusters are used to position the vessel and when the vessel is transiting at high speeds (Ref. 319). Removing the use of vessel DP would therefore significantly reduce the sound emissions from the vessel. However, when a vessel is slow moving or stationary (e.g. during IMR activities),	Given the safety risks, the cost of implementing shutdown zones for vessels operating under DP is considered grossly disproportionate to the environmental benefit gained. Therefore, the control measure has not been adopted for use.

	the DP system is a critical safety device to avoid potential impact to existing subsea infrastructure, and therefore removing this would introduce a significant safety risk to the operation. If anchoring (or other mooring systems) were used in place of DP, this would introduce both new environmental risks (e.g. seabed disturbance) and safety risks (e.g. anchoring within proximity of live infrastructure). Given the safety risks the use of DP is considered critical for vessel operations, and as such the implementation of shutdown zones to reduce sound emission risk to marine fauna is not considered a practicable mitigation measure. Note: transiting vessels are covered by the other controls.	
Limiting the duration and frequency of IMR activities or field operations during peak sensitive periods of the year for Whale Sharks	The OA intersects with a foraging BIA for Whale Sharks. This foraging BIA is associated with a northward migration from the Ningaloo Reef seasonal aggregation area along the 200 m isobath during July to November (Ref. 454). As described in the consequence evaluation the estimated distances and duration for TTS or recoverable injury to occur requires a Whale Shark to remain consistently within ~10–100 m from the sound source for extended (12–48 hours) periods. Given the duration component of the exposure, and expected transient presence of Whale Sharks on their northward migration, auditory impairment or injury to Whale Sharks is not predicted to occur. As such limiting IMR or field operations activities to a 7-month window each	The cost of implementing temporal restrictions is considered grossly disproportionate to the negligible environmental benefit to Whale Sharks, if any (and no change in residual risk). Therefore, the control measure has not been adopted for use.

<table>
<tr><td></td><td>year, outside of Whale Shark migration/foraging periods, is not considered to provide any additional environmental benefit.</td><td></td></tr>
<tr><td colspan="3">Likelihood and risk level summary</td></tr>
<tr><td>Likelihood</td><td colspan="2">Due to the nature and scale of the vessel and helicopter activities within scope of this EP, the prediction of localised and temporary behaviour disturbance, and the overlap with known BIAs for some fauna, the likelihood of exposing receptors resulting in the identified consequence was considered Seldom (3).</td></tr>
<tr><td>Risk level</td><td colspan="2">Low (7)</td></tr>
<tr><td colspan="3">Acceptability summary</td></tr>
<tr><td>Principles of ESD</td><td colspan="2">The risk associated with this aspect is a localised and temporary behaviour disturbance to individuals, which is not expected to result in effects at a population level that would prevent their long-term recovery or survival. As such, this aspect is not considered as having the potential to affect biological diversity and ecological integrity.
The consequence associated with this aspect is Minor (5).
Therefore, no further evaluation against the Principles of ESD is required.</td></tr>
<tr><td>Relevant environmental legislation and other requirements</td><td colspan="2">Legislation and other requirements considered applicable for this aspect include:
EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans
Biodiversity Conservation Regulations 2018
Conservation Management Plan for the Blue Whale 2015–2025 (Ref. 200)
Conservation Advice Rhincodon typus Whale Shark (Ref. 454)
Recovery Plan for Marine Turtles in Australia (Ref. 129)
Conservation Advice for Sousa Sahulensis (Australian Humpback Dolphin) (Ref. 3170)
Conservation Advice for Orcaella Heinsohni (Australian Snubfin Dolphin) (Ref. 164)
Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) (Ref. 213)
Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake) (Ref. 214)
Approved Conservation Advice for Pristis pristis (Largetooth sawfish) (Ref. 163).
CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.</td></tr>
<tr><td></td><td>Requirement</td><td>Demonstration</td></tr>
<tr><td></td><td>EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans
Caution and no approach zones for interacting with cetaceans from vessels.</td><td>Requirements of regulation 8.05 and 8.06 for vessels, and 8.07 for aircraft, interacting with cetaceans has been incorporated into the Marine fauna caution, approach and separation distances control measure.</td></tr>
</table>

	Vertical and horizontal distances for helicopter operations.	
	Conservation Management Plan for the Blue Whale 2015–2025 Management action A.2.3: Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury, and is not displaced from a foraging area	The activity is not considered to be inconsistent with the Conservation Management Plan for the Blue Whale. The OA does not intersect the designated Foraging Areas for Pygmy Blue Whales. The nearest foraging BIA occurs ~180 km southwest of the OA, offshore from North West Cape; and as such is not exposed to sound emissions resulting from the installation activities. A recent study has indicated areas of probable foraging along the NWS based on proxy indicators (Figure 4-23, Ref. 234). Similarly, based on satellite tracking data, from another study suggests habitat suitable for foraging extends out from the 200 m bathymetry contour of the WA coast (Ref. 164); notably there is no overlap with the OA and this area.
	Recovery Plan for Marine Turtles in Australia Management action A1.5: Manage anthropogenic activities to ensure marine turtles are not displaced from identified habitat critical to the survival Management action A1.6: Manage anthropogenic activities in Biologically Important Areas to ensure that biologically important behaviour can continue	TTS and PTS to marine turtles from accumulated SEL_{24h} exposures to non-impulsive sounds from vessels or helicopters are considered as not credible. Therefore, this activity is not considered to be inconsistent with the *Recovery Plan for Marine Turtles in Australia.*
	Conservation Advice for the Whale Shark 2015–2020 No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)	N/A

<table>
<tr><td></td><td>No specific conservation action identified.</td><td></td></tr>
<tr><td></td><td>Approved Conservation Advice for Pristis pristis (Largetooth sawfish)
No specific conservation action identified.</td><td>N/A</td></tr>
<tr><td>Internal context</td><td colspan="2">No CAPL environmental performance standards / procedures were deemed relevant for this aspect.</td></tr>
<tr><td>External context</td><td colspan="2">During stakeholder consultation, no objections or claims were raised regarding underwater sound emissions arising from the field support activities.</td></tr>
<tr><td>Defined acceptable level</td><td colspan="2">These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.
However, in alignment with Section 5.7, where the aspect is listed as a threat to a protected matter or identified as a concern to a listed conservation value, CAPL will define an acceptable level of impact that aligns with the objectives of these documents.
Objectives of the relevant documents are shown below.</td></tr>
<tr><td></td><td>Plan</td><td>Objective</td></tr>
<tr><td></td><td>Conservation Management Plan for the Blue Whale 2015–2025</td><td>Recovery objective: Minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list.
Interim objective 4
Anthropogenic threats are demonstrably minimised.</td></tr>
<tr><td></td><td>Recovery Plan for Marine Turtles in Australia</td><td>Recovery objective: The long-term recovery objective for marine turtles is to minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list.
Interim objective 3:
Anthropogenic threats are demonstrably minimised.</td></tr>
<tr><td></td><td colspan="2">Therefore, CAPL has defined the following acceptable level of impact such that it is not inconsistent with these documents:
impacts from the petroleum activity are managed such that it would not prevent the long-term recovery of protected species
no auditory injury (TTS or PTS) to Pygmy Blue Whales within a BIA resulting from underwater sound from the petroleum activity
no displacement of Pygmy Blue Whales from foraging areas resulting from underwater sound from the petroleum activity</td></tr>
</table>

<table>
<tr><td></td><td colspan="2">• no displacement of marine turtles from HCTS or a species resulting from underwater sound from the petroleum activity
• no disruption of biologically important behaviours of marine turtles within known BIAs resulting from underwater sound from the petroleum activity.
CAPL considers that the petroleum activity, with the control measures as described for this aspect in place, meet this acceptable level. In particular that by managing the risk to marine fauna, that the risk to values of the AMP are also subsequently managed to this acceptable level.</td></tr>
<tr><th>Environmental performance outcome</th><th>Performance standard / Control measure</th><th>Measurement criteria</th></tr>
<tr><td rowspan="3">No injury or mortality to marine fauna within the OA from petroleum activities as a result of noise generated by the activities under this EP</td><td rowspan="3">EPBC Regulations 2000 and Biodiversity Conservation Regulations 2018
Vessels under transit within the OA will implement caution, approach or separation distances (and associated vessel speeds):
• caution zone (300 m either side of whales; 15 m either side of dolphins)–vessels must operate at ≤6 knots within this zone, maximum of three vessels within zone, and vessels should not enter if a calf is present
• no approach zone (300 m to the front and rear of whales and 100 m either side; 300 m for whale calves; 150 m to the front and rear of dolphins and 50 m either side)–vessels should not enter this zone and should not wait in front of the direction of travel of an animal or pod, or follow directly behind
• a separation distance of 30 m from whale sharks and marine turtles, and 100 m from Dugongs–vessels must operate at ≤6 knots when moving away to maintain these separation distances.
Helicopters will:
• not operate at a height lower than 1,650 feet or within a horizontal radius of 500 m for a cetacean (unless during take-off, landing or for safety reasons)
• not approach a cetacean from head on</td><td>Induction materials include relevant marine fauna caution and no approach zone requirements</td></tr>
<tr><td>Training records confirm offshore personnel involved in IMR activities have completed the induction</td></tr>
<tr><td>Vessel records show if marine fauna interaction occurred within caution or approach zones, and what mitigation (e.g. divert or slow vessel) measure was implemented</td></tr>
</table>

	• maintain a separation distance of 500 m for whale sharks, Dugongs, and marine turtles.	

7.4.8 Invasive marine pests

Source

Activities identified as having the potential to result in the introduction of an invasive marine pest (IMP) are:

- planned discharged of ballast water or the presence of biofouling on vessels undertaking IMR activities within the OA.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	An introduction of an IMP may result in: • displacement of, or compete with, native species.	2

Consequence evaluation

IMPs are likely to have little or no natural competition or predators, thus potentially outcompeting native species for food or space, preying on native species, or changing the nature of the environment. It is estimated that Australia has >250 introduced marine pests, and that approximately one in six introduced marine species becomes a pest (Ref. 136).

The particular values and sensitivities within the OA with the potential to be impacted by the introduction of an IMP within the OA include:

- continental slope demersal fish communities (KEF)
- ancient coastline at 125 m depth contour (KEF)
- Montebello AMP
- ridgeline habitat and associated communities.

Although two KEFs were identified as having the potential to be exposed, as described in Section 4.5, within the OA, they are known to comprise soft sediment infauna communities. The OA overlaps the outer boundary of the Montebello AMP (<0.35%). The ridgeline comprises a hard substratum that supports higher amounts of benthic fauna (such as sponges and soft corals), it is located within a relatively undisturbed area within deep-waters.

Once established, some pests can be difficult to eradicate (Ref. 264) and therefore there is the potential for a long-term change in habitat structure. Highly disturbed shallow water and coastal marine environments (such as marinas) have been found to be more susceptible to colonisation than open-water environments, where the number of dilutions and the degree of dispersal is high (Ref. 384; Ref. 254; Ref. 133; Ref. 134). Although Invasive Species are identified as being of concern to marine reptile species under the *North-west Marine Bioregional Plan* (Ref. 216), the risk is associated with terrestrial based invasive marine species thus is not relevant to the activities covered under this EP.

If an IMP was introduced, and if it did colonise an area, there is the potential for that colony to spread outside the OA resulting in a widespread long-term impact, therefore resulting in a Severe (2) consequence.

ALARP decision context justification

Offshore commercial vessel operations, and subsequent planned discharges, are commonplace and well-practised locally, nationally, and internationally.

The causes resulting in an introduction of an IMP from a planned release of ballast water or hull biofouling are well understood by the industry and CAPL. The control measures to manage the risk associated with the introduction of an IMP are well defined via legislative requirements that are considered standard industry practice. These control measures are well understood and implemented by the petroleum industry and CAPL. Specifically, CAPL has worked in the region for over 10 years, thus has a demonstrated understanding of industry requirements and their operational implementation in these areas.

The risk of introducing an IMP is considered a lower-order risk in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source

Quarantine procedure	CAPL's *Quarantine Procedure Marine Vessels* (Ref. 81) provides information about quarantine compliance to CAPL, contractors, and others associated with marine vessels. The procedure also ensures that the requirements of various legislative or relevant guidelines are met, including: • undertaking biofouling risk assessments in line with the with the *National Biofouling Management Guidelines for the Petroleum Production and Exploration Industry* (Ref. 325) and WA Vessel Check system • requirements for biofouling management plans and/or biofouling record books, in accordance with the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Biofouling Guidelines) MPEC.207(62) 2011 (Ref. 278) The quarantine procedure requires that all relevant biofouling information is provided to enable suitable risk assessments to be completed.
Maritime Arrivals Reporting System (MARS)	Under the *Biosecurity Act 2015* (Cth), pre-arrival information must be reported through MARS before a vessel arrives in Australian waters.
Ballast water management	The *Australian Ballast Water Management Requirements* (Ref. 138) describes the management requirements for ballast water exchange, including: • non-discharge of 'high-risk' ballast water in Australian ports or waters • full ballast exchange outside Australian territorial seas • documentation of all ballast exchange activities.
Anti-fouling certificate	The *Protection of the Sea (Harmful Anti-fouling Systems) Act 2006* (Cth) enacts Marine Order 98 (Marine pollution – anti-fouling systems). This marine order describes the conditions for when an antifouling certificate is required.

Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A

Likelihood and risk level summary	
Likelihood	As the scale of vessel activities within shallow waters is limited, and with the well-known and implemented IMP control measures in place, it is considered Rare (6) that an IMP would be introduced resulting in impacts to the ecological functions of the KEFs or ridgeline habitat.
Risk level	Low (7)

Acceptability summary	
Principles of ESD	The potential impact associated with this aspect is a widespread long-term impact to benthic communities, which are expected to comprise soft sediment communities. The introduction of an IMP to these communities has the potential to affect biological diversity and ecological integrity. The consequence associated with this aspect is Severe (2). Therefore, further evaluation against the remaining Principles of ESD is required. There is little uncertainty associated with this aspect as the activities and cause pathways are well known and the activities are well regulated and managed. The habitat within the OA is known from baseline studies, thus the understanding of benthic habitat at these locations is well understood (Section 4.3.3.4.1). As such, there is limited scientific uncertainty associated with this aspect; consequently the precautionary principle has not been applied.
Relevant environmental legislation and	Legislation and other requirements considered relevant for this aspect include: • Biosecurity Act 2015 (Cth)

other requirements	• *Protection of the Sea (Harmful Anti-fouling Systems) Act 2006* (Cth) (enacted by Marine Order 98 [Marine pollution – anti-fouling systems]) • Australian Ballast Water Management Requirements (Ref. 138) • Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Biofouling Guidelines) MPEC.207(62)) 2011 (Ref. 278) • National Biofouling Management Guidelines for the Petroleum Production and Exploration Industry (Ref. 325).	
Internal context	This CAPL environmental performance standard / procedure was deemed relevant for this aspect: • *Quarantine Procedure Marine Vessels* (Ref. 81).	
External context	During stakeholder consultation, no objections or claims were raised regarding IMPs arising from the activity.	
Defined acceptable level	These risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No introduction and establishment of invasive marine pests within the OA due to petroleum activities	**Quarantine procedure** All marine vessels undertaking activities in the OA must meet the relevant requirements of the *Quarantine Procedure Marine Vessels*, including that where required: • biofouling risk assessments are completed biofouling management plans and/or biofouling record books are available.	Records confirm that relevant vessels meet requirements of the *Quarantine Procedure Marine Vessels*
	Maritime arrivals reporting system Vessels entering into the Australian territorial sea from outside Australian territory will complete pre-arrival reporting (unless Excepted under Biosecurity Determination 2016), in accordance with the *Biosecurity Act 2015* (Cth).	Records confirm that international vessels completed pre-arrival reporting (or can demonstrate meeting conditions for an exception)
	Ballast water management International marine vessels will be required to comply with the key *Australian Ballast Water Management Requirements*, which are: • non-discharge of 'high-risk' ballast water in Australian ports or waters • full ballast exchange outside Australian territorial seas • documentation of all ballast exchange activities.	For international marine vessels, records show compliance with the Australian Ballast Water Management Requirements
	Antifouling certificate Marine vessels greater than 400 GT with an anti-foul coating are to maintain up-to-date international antifouling coating certification in accordance with *Protection of the Sea (Harmful Anti-fouling Systems) Act 2006* (Cth) and/or the International	Records or inspection reports (or equivalent) confirm that international antifouling coating certifications are up-to-date

	Convention on the Control of Harmful Anti-fouling Systems on Ships	

7.4.9 Planned discharges—Vessel operations

Source

Activities identified as having the potential to result in planned discharges are:

- vessels operations (during IMR activities) within the OA.

The types of planned vessel discharges include deck wash-water, fire-fighting foam, sewage, greywater, food wastes, cooling water, and oily bilge water.

Potential impacts and risks

Impacts	C	Risks	C
Planned discharges from vessels may result in: • localised and temporary reduction in water quality.	6	A change in ambient water quality may result in: • changes to predator-prey dynamics.	6

Consequence evaluation

Localised and temporary reduction to water quality

Open marine waters are typically influenced by regional wind and large-scale ocean current patterns resulting in the rapid mixing of surface and near-surface waters—where vessel discharges would occur (Ref. 357). Vessel discharges would occur in these surface and near-surface waters. Therefore, nutrients from sewage, or other similar, discharges will not accumulate or lead to eutrophication due to the highly dispersive environment (Ref. 357). This outcome was verified by sewage discharge monitoring for another offshore project (Ref. 492), which determined that a 10 m^3 sewage discharge reduced to ~1% of its original concentration within 50 m of the discharge location. In addition, monitoring at distances 50 m, 100 m, and 200 m downstream, and at five different water depths, confirmed that discharges were rapidly diluted and no elevations in water quality monitoring parameters (e.g. total nitrogen, total phosphorous, and selected metals) were recorded above background levels at any station. This modelling was based on volumes that far exceed volumes expected during support vessel operations. Therefore, the extent of impacts are expected to be localised to the discharge location.

Monitoring of desalination brine of continuous wastewater discharges (including cooling water) undertaken by Woodside for its Torosa South-1 drilling program in the Scott Reef complex found that discharge water temperature decreases quickly as it mixes with the receiving waters, with the discharge water temperature being <1 °C above ambient within 100 m (horizontally) of the discharge point, and 10 m vertically (Ref. 492).

A vessel's bilge system is designed to safely collect, contain and dispose of oily water so that discharge of hydrocarbons to the marine environment is minimised or avoided. Bilge water is processed via an oil-water separator before being discharged to sea. Discharge is intermittent and occurs at or near surface waters. As such, oily bilge discharges are expected to readily dilute and disperse under the action of waves and currents in surface waters. In addition, once exposed to air, any volatile components of the oil will readily evaporate.

Testing of fire-fighting deluge systems onboard vessels often leads to a release of fire-fighting foams offshore. Toxicological effects from these types of foams is typically only associated with prolonged or frequent exposures, such as on land and in watercourses near firefighting training areas (Ref. 222; Ref. 223). These conditions are not consistent with the use under this EP where use of the systems may arise once or twice over the duration of this EP. In their diluted form (as applied in the event of a fire or test), fire-fighting foams are generally considered to have a relatively low toxicity to aquatic species (Ref. 224; Ref. 225) and further dilution of the foam mixtures in dispersive aquatic environments may then occur before there is any substantial demand for dissolved oxygen (Ref. 226).

Consequently, CAPL believes that the change in water quality from these standard discharges is limited to a localised area and returns to ambient following completion of the discharge; therefore, any impacts are Incidental (6).

Changes to predator / prey dynamics

The overboard discharge of sewage and macerated food waste creates a localised and temporary food source for scavenging marine fauna or seabirds, whose numbers may temporarily increase as a result, thus increasing the food source for predatory species.

However, the rapid consumption of this food waste by scavenging fauna, and physical and microbial breakdown, ensures that the impacts of food waste discharges are insignificant and temporary and that all receptors that may potentially be in the water column are not impacted.

The values and sensitivities within the OA with the potential to be affected by changes in predator–prey dynamics include:

- Whale Shark (foraging)
- Fish communities (associated with the various KEFs).

Effects on environmental receptors along the food chain—fish, reptiles, birds, and cetaceans—are not expected beyond the immediate vicinity of the discharge in open waters (Ref. 357).

Studies into the effects of nutrient enrichment from offshore sewage discharges indicate that the influence of nutrients in open marine areas is much less significant than that experienced in enclosed areas (Ref. 336) and suggest that zooplankton composition and distribution in areas associated with sewage dumping grounds are not affected. However, if any changes in phytoplankton or zooplankton abundance and composition occur, they are expected to be localised, typically returning to background conditions within tens to a few hundred metres of the discharge location (Ref. 3; Ref. 29; Ref. 383).

As described above, plankton communities are not affected by sewage discharges, but if they are, such effects would be highly localised (expected to return to background conditions within tens to a few hundred metres of the discharge location). Consequently, subsequent indirect impacts to other marine fauna are not expected, and thus are not considered further.

Although fish are likely to be attracted to these discharges, any attraction and consequent change to predator–prey dynamics is expected to be limited to close to the release and thus is expected to result in localised impacts to species. Any increased predation is not expected to result in more than a limited environmental impact; therefore, the consequence is Incidental (6).

ALARP decision context justification

Offshore commercial vessel operations, and subsequent planned discharges, are commonplace and well-practiced locally, nationally, and internationally. The control measures to manage the risk associated with these planned discharges are well defined via legislative requirements that are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding vessel discharges arising from the activity.

The impacts associated with these discharges are lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
MARPOL 73/78 sewage discharge	Marine Order 96 (Sewage) gives effect to MARPOL 73/78 Annex IV. MARPOL is the International Convention for the Prevention of Pollution from Ships is aimed at preventing both accidental pollution and pollution from routine operations.
MARPOL 73/78 food waste discharge	Marine Order 95 (Marine pollution prevention – garbage) gives effect to MARPOL 73/78 Annex V, which details the conditions in which macerated and unmacerated food waste can be discharged to the environment.
MARPOL 73/78 oily bilge discharge	Marine Order 91 (Marine pollution prevention – oil) gives effect to MARPOL 73/78 Annex I, which details the conditions by which oily bilge is authorized to be discharged to the environment.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
N/A	N/A	N/A

Likelihood and risk level summary

Likelihood	Given the nature and scale of this activity with standard control measures in place, it is considered Remote (5) that these discharges would result in any

<table>
<tr><td></td><td colspan="2">impact to the ecological function of the particular values and sensitivities present within the OA.</td></tr>
<tr><td>Risk Level</td><td colspan="2">Very low (9)</td></tr>
<tr><td colspan="3">Determination of acceptability</td></tr>
<tr><td>Principles of ESD</td><td colspan="2">The potential impact associated with this aspect is limited to a short-term direct reduction in water quality in a localised area, which is not considered as having the potential to affect biological diversity and ecological integrity.
Accordingly, the consequence associated with this aspect is Incidental (6).
Therefore, no further evaluation against the Principles of ESD is required.</td></tr>
<tr><td>Relevant environmental legislation and other requirements</td><td colspan="2">Legislation and other requirements considered relevant to this aspect include:
• Marine Order 91
• Marine Order 95
• Marine Order 96
• MARPOL 73/78 Annex I, IV and V
CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.
<table>
<tr><th>Requirement</th><th>Demonstration</th></tr>
<tr><td>Marine Order 96
Gives effect to Annex IV of MARPOL 73/78</td><td>Requirements for offshore discharge of sewage have been incorporated into the MARPOL 73/78 sewage discharge control measure</td></tr>
<tr><td>Marine Order 95
Gives effect to Annex V of MARPOL 73/78</td><td>Requirements for offshore discharge of food have been incorporated into the MARPOL 73/78 food waste discharge control measure</td></tr>
<tr><td>Marine Order 91
Gives effect to Annex I of MARPOL 73/78</td><td>Requirements for offshore discharge of oily bilge water from vessels have been incorporated into the MARPOL 73/78 oily bilge water discharge control measure</td></tr>
</table></td></tr>
<tr><td>Internal context</td><td colspan="2">These CAPL environmental performance standard / procedures were deemed relevant for this aspect:
• Marine Standard Non Tankers: Corporate OE Standard (Ref. 100)</td></tr>
<tr><td>External context</td><td colspan="2">During stakeholder consultation, no objections or claims were raised regarding discharges arising from the activity.</td></tr>
<tr><td>Defined acceptable level</td><td colspan="2">These impacts and risks are inherently acceptable as they are lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.</td></tr>
<tr><td>Environmental performance outcome</td><td>Performance standard / Control measure</td><td>Measurement criteria</td></tr>
<tr><td>No impacts to marine habitats or marine fauna outside of the OA from vessel discharges during petroleum activities</td><td>MARPOL 73/78 sewage discharge
Offshore discharge of sewage from vessels will be in accordance with these MARPOL 73/78 Annex IV requirements:
• An IMO approved comminution and disinfection system to discharge (greater than 3 nm from the nearest land); or</td><td>Records show sewage is discharged in accordance with MARPOL 73/78 Annex IV, including current International Sewage Pollution Prevention (ISPP) Certificate (for marine vessels >400 T or certified to carry more than 15 persons)</td></tr>
</table>

	• An IMO approved Sewage Treatment Plant at any location; or • Untreated sewage discharged ≥12 nm from the nearest land while the vessel is proceeding at no less than 4 knots.	
	MARPOL 73/78 food waste discharge Offshore discharge of food waste from vessels will be in accordance with these MARPOL 73/78 Annex V requirements: • macerated to no greater than 25 mm and when the marine vessel is at least 3 nm from the nearest land; or • unmacerated when the marine vessel is at least 12 nm from the nearest land.	Records show food waste is discharged in accordance with MARPOL 73/78 Annex V
	MARPOL 73/78 oily bilge water discharge Oily bilge water will be discharged to marine environment only when the concentration is <15 ppm in accordance with MARPOL 73/78, Annex I: • through an IMO approved on board oil-water separator; and • when the marine vessel is en route.	Records show oily bilge water is discharged in accordance with MARPOL 73/78 Annex I, including current International Oil Pollution Prevention (IOPP) Certificate

7.4.10 Unplanned release—Waste

Source

Activities identified as having the potential to result in the unplanned release of waste are:

- vessel operations (during IMR activities) within the OA.

Because waste is generated on board vessels, inappropriate management and storage has the potential to result in a release to the environment.

Potential impacts and risks

Impacts	C	Risks	C
• N/A	-	Unplanned release of waste to the environment may result in: • marine pollution resulting in entanglement or injury of marine fauna	6

Consequence evaluation

If hazardous / non-hazardous waste is lost overboard, the extent of exposure to the environment is limited.

Marine fauna most at risk from marine pollution include marine reptiles and seabirds, through ingestion or entanglement (Ref. 129; Ref. 454). Ingestion or entanglement has the potential to limit feeding or foraging behaviours and thus can result in marine fauna injury or death. Although marine debris is identified as being of concern to marine reptile species under the *North-west Marine Bioregional Plan* (Ref. 216), the risk is associated with 'land-sourced plastic garbage, fishing gear from recreational and commercial fishing abandoned into the sea, and ship-sourced, solid non-biodegradable floating materials disposed of at sea'. This type of waste is not associated with the activities described under this Plan and given the restricted exposures and the limited quantity of waste with the potential to cause marine pollution that is expected to be generated from this program, it is expected that any impacts from marine pollution would result in limited impacts to individuals. Thus, CAPL ranked this consequence as Incidental (6).

ALARP decision context justification

Offshore commercial vessel operations, and the subsequent management of waste, are commonplace and well-practiced activities within the industry. The control measures to manage the risk associated with an unplanned release of waste are well defined via legislative requirements that are considered standard industry practice. There is a good understanding of the release pathways, and the control measures required to manage these events are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding waste management arising from the activity.

An unplanned release of waste is a lower-order risk in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Marine Order 95 (Marine pollution prevention – garbage)	MARPOL 73/78 is the International Convention for the Prevention of Pollution from Ships and is aimed at preventing both accidental pollution, and pollution from routine operations. Specifically, MARPOL 73/78 Annex V requires that a garbage management plan and garbage record book is in place and implemented and describes various requirements that are to be applied when managing waste offshore. Marine Order 95 (Marine pollution prevention – garbage) gives effect to MARPOL 73/78 Annex V.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
N/A	N/A	N/A

Likelihood and risk level summary		
Likelihood	Marine pollution arising from mismanaged waste offshore has occurred previously in the industry but is not expected to occur during these activities, given the control measures in place. As such, the likelihood of incidental consequences to values and sensitivities from an unplanned release of waste is considered Remote (5).	
Risk level	Very low (10)	
Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect is limited to individuals and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Incidental (6). Therefore, no additional evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered relevant for this aspect include: • Marine Order 95 • MARPOL 73/78 • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129) • *National Recovery Plan for albatrosses and petrels (2022)* (Ref. 156)	
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.	
External context	No objections or claims were raised regarding waste management arising from field support activities.	
Defined acceptable level	These impacts are inherently acceptable as they are lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No uncontrolled release of waste to the environment during petroleum activities	**Marine Order 95 (Marine pollution prevention – garbage)** Marine vessels >100 T (or certified to carry >15 persons) will have a Garbage Management Plan on board, in accordance with MARPOL 73/78 Annex V	OVIS report / ABU Marine OE Inspection Checklist verifies that a Garbage Management Plan is on board marine vessels >100 T or certified to carry >15 persons
	Marine Order 95 (Marine pollution prevention – garbage) Marine vessels >400 T (or certified to carry >15 persons) will have a Garbage Record Book on board, in accordance with MARPOL 73/78 Annex V	Current and completed Garbage Record Book (for marine vessels >400 T or certified to carry >15 persons)
	Marine Order 95 (Marine pollution prevention – garbage) For waste that is incinerated on board a marine vessel, the	Current International Air Pollution Prevention (IAPP) Certificate (for marine vessels >400 T or certified to carry >15 persons)

	incinerator is to be IMO-approved and the waste incinerated is to be recorded in accordance with MARPOL 73/78 Annex V	Current and completed Garbage Record Book (for marine vessels >400 T or certified to carry >15 persons).

7.4.11 Unplanned release—Loss of containment

Source

Activities identified as having the potential to result in a minor LOC event:

- vessel operations within the OA.

Based on the activities described in this EP, the following potential minor LOC scenarios were identified:

- mechanical failure/damage or human error of hazardous materials storage resulting in a loss of diesel or other fluid[1]
- mechanical failure/damage or human error during bunkering resulting in a loss of marine fuel[2].

[1] A range of hydrocarbons and other hazardous chemicals / materials are likely to be present during start-up and operation activities; however, the maximum credible volume associated with a single-point failure was estimated to be ~1 m^3 based on the loss of an entire intermediate bulk container due to rupture while handling.

[2] AMSA (Ref. 15) suggests the maximum credible spill volume from a refuelling incident with continuous supervision is approximately the transfer rate × 15 minutes. Assuming failure of dry-break couplings and an assumed 200 m^3/h transfer rate (based on previous operations), this equates to an instantaneous spill volume of ~50 m^3.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Unplanned release of hazardous material to the environment may result in: • indirect impacts to fauna arising from chemical toxicity	5

Consequence evaluation

Upon release, a loss of 50 m^3 of a hazardous product (such as light hydrocarbons [diesel] or chemicals) would be expected to change the water quality of both surface and pelagic waters.

The environmental impacts associated with a surface release of 50 m3 of marine diesel oil (MDO) or other hazardous materials are expected to be much less than those associated with a loss of hydrocarbons from a vessel collision (Section 8.2), and thus are not evaluated in detail here.

The values and sensitivities within the OA with the potential to be exposed to decreased water quality from a minor LOC surface release include:

- Humpback Whale (migration)
- Pygmy Blue Whale (migration)
- Flatback Turtle (internesting buffer, nesting)
- Hawksbill Turtle (internesting buffer)
- Whale Shark (foraging).

Based on the nature of these unplanned releases, which are non-continuous and expected to occur in a location where no specific sedentary behaviours for values and sensitivities have been identified, the extent and severity of any potential impact is expected to be limited.

Given the nature of unplanned releases covered under this EP and the transient nature of identified values and sensitivities, fauna would need to pass directly through the plume almost immediately upon release to be impacted.

Any potential impact from such an event is expected to be short term and limited to a small number of individuals, thus the consequence level was determined as Minor (5).

ALARP decision context justification

Offshore vessel operations are commonplace and well-practised offshore activities. The control measures to manage the risk associated with minor LOC scenarios from these activities are well defined via legislative requirements that are considered standard industry practice. There is a good understanding of potential spill sources, and the control measures required to manage these are well understood and implemented by the petroleum industry and CAPL.

During stakeholder consultation, no objections or claims were raised regarding minor LOC management arising from the activity. These risks are lower-order risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.		
Good practice control measures and source		
Control measure	**Source**	
Marine Standard	Chevron's *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100) ensures that various legislative requirements and CAPL standards are met. Specifically, pre-mobilisation inspections may include: • visual checks of accessible equipment and hydraulic hoses for defects • confirmation that dry-break couplings or similar automated stop devices are available for use on marine vessels that are refuelled at sea • secondary containment is available for hydrocarbons and chemicals stored on the deck of marine vessels • bunkering procedures are available.	
Ship Oil Pollution Emergency Plan (SOPEP)/ Shipboard Marine Pollution Emergency Plan	MARPOL 73/78 Annex I and Marine Order 91 (Marine pollution prevention – oil) requires that each vessel has an approved SOPEP in place. To prepare for a spill event, the SOPEP details: • response equipment available to control a spill event • review cycle to ensure that the SOPEP is kept up to date • testing requirements, including the frequency and nature of these tests. In the event of a spill, the SOPEP details: • reporting requirements and a list of authorities to be contacted • activities to be undertaken to control the discharge of oil • procedures for coordinating with local officials.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	The likelihood that a minor LOC event results in a Minor (5) consequence was determined to be Remote (5). With the control measures in place, it was considered very unlikely that a minor LOC event associated with this activity would occur, and even more unlikely that such an event would impact any of the identified values and sensitivities, which are known to be transient and unlikely to be present at the exact location of the minor LOC.	
Risk level	Very low (9)	
Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect would be short term, apply to some individuals, and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no additional evaluation against the Principles of ESD is required.	
Relevant environmental	Legislation and other requirements considered relevant for this aspect include:	

legislation and other requirements	• Marine Order 91, Marine pollution prevention – oil • MARPOL 73/78	
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • *Marine Standard* Non Tankers: Corporate OE Standard (Ref. 100).	
External context	No objections or claims were raised regarding minor LOC management arising from the activity.	
Defined acceptable level	These impacts are inherently acceptable as they are lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
No unplanned release of hydrocarbons / hazardous materials to the environment during petroleum activities	**Marine Standard** Prior to commencement of IMR activities, the following will be undertaken during a pre-mobilisation vessel inspection: • visual checks of accessible equipment and hydraulic hoses for defects • confirmation that dry-break couplings or similar automated stop devices are available for use on marine vessels that are refuelled at sea • confirmation that secondary containment is available for hydrocarbons and chemicals stored on the deck of marine vessels.	OVIS report / ABU Marine OE Inspection Checklist confirms that equipment and hydraulic hoses are visually free of defects, dry-break couplings or similar are available for use, and, and secondary containment is available on the deck of the marine vessel
	Marine Standard Refuelling is undertaken in accordance with CAPL-approved refuelling / bunkering procedures, which include the appropriate weather / sea / visibility conditions, as determined by the Vessel Master.	Records confirm that refuelling is undertaken in accordance with CAPL-approved refuelling / bunkering procedure
Reduce the risk of impacts to the environment from the unplanned release of hydrocarbons / hazardous materials during petroleum activities	**SOPEP** Marine vessels >400 T will carry on board a Shipboard Oil Pollution Emergency Plan (SOPEP) in accordance with MARPOL 73/78 Annex I – Prevention of Oil Pollution	OVIS report / ABU Marine OE Inspection Checklist confirms an approved SOPEP is on board marine vessels >400 T
		Inspection records (or similar) show drills conducted in accordance with SOPEP
		Inspection records (or similar) show spill kits available in accordance with SOPEP
	SOPEP In the event of a vessel-based spill event, emergency response	Records confirm that emergency response activities were implemented in accordance with

	activities will be implemented in accordance with the vessel SOPEP (or equivalent)	the vessel SOPEP in the event of a vessel-based spill.

7.5 Intangible Cultural Heritage

Source

Activities identified in Sections 7.1 to 7.4 have the potential to result in risks to intangible cultural heritage values.

Potential impacts and risks

Impacts	C	Risks	C
–	–	• changes to intangible cultural heritage values	5

Consequence evaluation

Changes to intangible cultural heritage values

Intangible cultural heritage refers to the "practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognise as part of their cultural heritage" (Ref. 318). As identified from literature and/or consultation (Section 4.3.6.2), Sea Country is a value for First Nations people. It is understood that the term 'Country' refers to more than just a geographical area, and includes values, places, resources, stories, and cultural obligations associated with that geographical area. Specific intangible values of Sea Country identified through consultation include Dreamtime stories and songlines (Section 4.3.6.2).

Songlines are paths that track across Country and skies, representing Indigenous knowledge that has been collected, protected and transmitted (Ref. 319). Songlines are living tools that embed and mediate history, ecological knowledge, relationships, ancestral beings, and cultural belonging on Country (Ref. 319). Certain songlines may be referred to as 'Dreaming Pathways' because of the tracks forged by Creator Spirits during the Dreaming (Ref. 321). Kearney et al. (Ref. 320) describe that for saltwater peoples "stories and songlines locate, interpret and inscribe knowledges of both the Dreaming tracks, bodies and movements of ancestral beings that criss-cross over Sea Country and the permanent sites of ancestral inhabitation within the marine environment". Fauna are also woven into the Dreaming, songlines and stories (Ref. 80).

Listening and talking with Country through stories, songlines, and other practices are ways First Nations care for, navigate, and connect with Country (Ref. 322). Songlines rely on the continued health of Country, and people's continued access and connection to it (Ref. 319). When Country is damaged or altered, so too are songlines and the knowledge they embody and enact (Ref. 319).

All of the potential impacts and risks assessed in Sections 7 and 8 have the potential to impact intangible cultural heritage, however, as all have been assessed as lower-order impacts and risks, that are ALARP and acceptable with suitable controls in place (see Table 7-1). As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from the petroleum activities and CAPL has ranked the consequence for intangible cultural heritage values as Minor (5).

ALARP decision context justification

Offshore petroleum activities are commonplace; and are practised nationally and internationally. The control measures to manage the impacts associated with intangible cultural heritage have been implemented by the industry.

During relevant persons consultation, a claim regarding the risk of disruption to intangible cultural heritage was received. This claim was responded to by CAPL (see summary in 'external context' below, and within appendix d).

The impacts on intangible cultural heritage are considered lower-order impacts in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures

Control measure	Description
Relevant persons consultation—Ongoing consultation (First Nations people	In addition to consultation undertaken during the preparation of this EP (as required by Regulation 25 of the OPGGS(E)R, and described in Section 6), as part of ongoing consultation (as required by regulation 22(15) of the OPGGS(E)R, and described in Section 9.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This

and/or representative bodies)	ongoing consultation relates to both the specific petroleum activity (Table 9-5) as well as broader engagement and relationship building (Section 9.3.4.3). Ongoing consultation and relationship building with First Nations people and/or representative bodies provides a continual improvement opportunity to support CAPLs understanding of cultural values or features that may be present within their areas of operation, and subsequently allow potential impacts and risks to be managed to an ALARP and acceptable level.	
	If new information on cultural values or features within the OA or EMBA is identified during ongoing consultation or relationship building, then any subsequent changes to activities or impacts/risks within the scope of the EP, will undergo an MoC evaluation as per Section 9.3.2.2.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	The petroleum activity may cause localised and temporary impacts to intangible cultural heritage. Consequently, CAPL considers the likelihood of the consequence occurring as being Unlikely (4).	
Risk level	Low (8)	
Determination of acceptability		
Principles of ESD	The potential impact is limited to localised short-term effects that are not expected to affect biological diversity and ecological integrity and in turn intangible cultural heritage values The consequence associated with this aspect is Minor (5). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No legislation or other requirements considered relevant for this aspect.	
Internal context	No CAPL environmental performance standards / procedures were deemed relevant for this aspect.	
External context	During consultation, relevant persons identified the potential for disruption to intangible cultural heritage (appendix d) from the presence of the Wheatstone, Iago, Julimar, and Brunello gas fields. CAPL responded confirming: • there is no proposed installation of new infrastructure associated with the EP. The Wheatstone, Iago, Julimar and Brunello infrastructure are already in place and operational. • cultural heritage features has been considered in the environment description and risk assessments within the EP. • control measures to reduce the risk of impacts to marine fauna have been included in the EP CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation.	
Defined acceptable level	All potential impacts and risks evaluated in Section 7 are inherently acceptable as they are considered lower-order impacts and risks in accordance with Table 5-3. In addition, all potential impacts and risks evaluated in Section 7 are not inconsistent with any relevant recovery or conservation management plans, conservation advice, or bioregional plans. CAPL considers that the petroleum activity, with the control measures as described for this aspect in place, meet this acceptable level. In particular	

	that by managing the risk to marine fauna, that the impacts to intangible cultural heritage are also subsequently managed to this acceptable level.	
Environmental performance outcome	**Environmental performance standard**	**Measurement criteria**
No adverse change to First Nations intangible cultural heritage values from the petroleum activity	**Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies)** Ongoing consultation with First Nations people and/or representative bodies is undertaken as per the respective engagement plan and/or consultation protocol	Relevant persons consultation records
	Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies) If new information on cultural values or features within the OA or EMBA is identified during ongoing consultation or relationship building, then any subsequent changes to activities or impacts/risks within the scope of the EP, will undergo an MoC evaluation	As required, records show that the MoC process was undertaken in response to any new information on cultural values or features within the OA or EMBA

8 environmental impact and risk assessment and management—emergency events and response

This section provides an evaluation of the impacts and risks associated with emergency events/response appropriate to the nature and scale of each impact and risk, details the control measures that are used to reduce the risks to ALARP and to an acceptable level, and identifies the associated environmental performance outcomes, performance standards, and measurement criteria.

Table 8-1 summarises the impacts and risks that were identified and evaluated for this activity.

Table 8-1: Summary of impact and risk evaluation—emergency events and response

Section	Aspect	Impact	Risk			Decision context	ALARP	Acceptable
		C^	C^	L	R			
8.1	Unplanned release—hydrocarbon system	–	5	5	9	A	Yes	Yes
8.2	Unplanned release—vessel collision event	–	5	5	9	A	Yes	Yes
8.3.4.1	Ground disturbance—shoreline spill response	–	5	5	9	A	Yes	Yes
0	Physical presence—oiled wildlife response	–	5	5	9	A	Yes	Yes

C = consequence, L = likelihood, R = risk

^ Where an aspect is identified as having both potential impacts and risks, the highest-level consequence was evaluated in detail to ensure that justification is provided to support the highest consequence level for that aspect.

8.1 Unplanned release—hydrocarbon system

Operation of the subsea hydrocarbon system introduces the potential for an unplanned release of gas and condensate. An evaluation of all spill scenarios associated with the hydrocarbon system was completed and the following scenarios identified:

- LOC event (Section 8.1.1.1)
- loss of well integrity event (Section 8.1.1.2)
- loss of effective well control event (Section 8.1.1.3)
- minor defect in flowline or production pipeline (Section 8.1.1.4)
- major defect in flowline or production pipeline (Section 8.1.1.5).

Based upon the scenario evaluation, a major defect in flowline or production pipeline was deemed to present the worst-case credible spill scenario under this EP and has been used as the basis for the risk assessment.

8.1.1 Scenario evaluation

8.1.1.1 LOC event

Corrosion or mechanical failure/damage of flowlines or subsea values may result in a release of condensate, control fluids, or MEG. CAPL defined the worst-case credible scenario as a ~58 m^3 release of condensate from a flowline. This scenario was deemed feasible for the activities undertaken in this EP. The risk associated with this scenario is evaluated in Section 7.1.4.

8.1.1.2 Loss of well integrity

Section 12.2.2 of the NOPSEMA-accepted *Wheatstone Project: Producing Phase Well Operations Management Plan* (Ref. 92) describes the different well control events and levels of emergency response associated with these situations. Under the WOMP, CAPL categorise well control into two categories:

- loss of well integrity—where integrity of the well has been compromised, but the well remains under control (which would prompt a Level 1 or Level 2 well control emergency response)
- loss of effective well control—where control of the well has been lost (which would require a Level 3 well control emergence response).

Section 9.7.2 of the WOMP (Ref. 92) identifies that a loss of well integrity during start-up and production operations has the potential to occur by:

- mechanical failure (leak in A annulus or leak in production casing)
- overpressure (overpressure of annulus leading to burst casing)
- corrosion (corrosion leading to loss of tubing or casing integrity)
- erosion of barriers through excessive solids production
- operating error (incorrect operation of valves or controls, or SIMOPS clashes)
- dropped objects onto the well envelope (potential damage to subsea tree).

As detailed in the WOMP, primary and secondary barriers are in place to mitigate well integrity impacts during start-up and production operations. These barriers include:

- subsea tree (primary)
- production conduit pressure envelope (primary)
- “A” annulus pressure envelope (secondary).

In addition to this, an emergency (tertiary) barrier is in place being the SCSSV flapper valve.

Based upon the activities within scope of this EP, CAPL has calculated that a worst-case credible spill scenario associated with a loss of well integrity event is limited to the contents of the well above the SCSSV flapper valve. This equates to 20.5 m^3 for Wheatstone wells, 18.8 m^3 for Iago wells, and 5.5 m^3 for JDP wells. These volumes are based on the capacity of the production tubing conduit between the SCSSV flapper valve and the subsea tree located at the wellhead.

If a loss of well integrity event was to occur for any of the Wheatstone or Iago wells, following any closing of valves by the Operations work group (managed from the control room on the Wheatstone Platform), the shut-in well would be handed over

to the ABU Wells work group as detailed in Section 3.2.1.1.1. Any subsequent works (e.g. well intervention) to address the well integrity issue would become planned activities implemented under the NOPSEMA-accepted *Wheatstone Project: Wheatstone Well Intervention and Infill Drilling Environment Plan* (Ref. 107). The risks, management measures, response and capability arrangements for well intervention activities are covered under the separate accepted EP (Ref. 107) and are not assessed here.

8.1.1.3 Loss of effective well control

As detailed in the WOMP, a loss of effective well control event is identified as a feasible risk during well construction and well interventions activities (Ref. 92). Well construction and intervention activities are not within the scope of this EP (Section 1.1.1); they are covered within the NOPSEMA-accepted *Wheatstone Project: Wheatstone Well Intervention and Infill Drilling Environment Plan* (Ref. 107).

As well construction and intervention activities are not included within the scope of this EP, CAPL does not consider a loss of effective well control to be a feasible risk associated with the activities within this EP. Consequently, this scenario is not assessed further here.

8.1.1.4 Minor defect in flowline or production pipeline

Modelling was undertaken by Intecsea (Ref. 501) to understand indicative release rates prior to isolation of leaks from the Wheatstone trunkline. Results indicate that release rates prior to isolation did not vary significantly with location of release, and were estimated at ~0.01 kg/s for 2 mm defects, <1 kg/s for 15 mm defects, and <10 kg/s for 50 mm defects (Ref. 501).

Based on a time before isolation at 24 hours, no depressurisation of the pipeline, and a release duration of up to 30 days, a total of up to ~663 m^3, ~4,310 m^3, and ~1,060 m^3 was predicted to be released in a leak located near the platform, mid-trunkline, and nearshore respectively (Ref. 501).

However, due to the slow daily release rate, the properties of the hydrocarbon fluid (including highly volatile and evaporating once reaching the surface), and the high dispersion and dilution that would occur in an open ocean environment, the exposure due to a minor leak is considered to be limited in nature and scale.

8.1.1.5 Major defect in flowline or production pipeline

Upon evaluating the risks associated with activities covered under this EP, CAPL considers that a major defect in a flowline or trunkline is the most credible (but unlikely) unplanned event. Specifically, a full-bore rupture (FBR) was selected as the worst-case major defect event.

For the purpose of this risk assessment, modelling to determine the credible spill volumes from a FBR event was completed for three locations along the trunkline: inner (nearshore), middle, and outer (platform) (Ref. 501).

Results indicated it would conservatively take ~2 hours to detect and isolate the trunkline following a FBR, based on the time it takes for the arrival pressure at the LNG Plant to drop from maximum operating pressure to below the minimum arrival pressure, assuming no isolation of flow into the trunkline. Such a drop in delivery pressure at the downstream plant will trigger alarm/detection and production would cease.

Consequently, a FBR at the middle location would result in ~3,710 m^3 of condensate fluids being released within ~7.2 hours, which includes the 2 hours required for detection and isolation (Ref. 501). This is the largest volume released of the three scenarios, as the middle location FBR would be fed by product from both upstream and downstream of the rupture location. The inner nearshore location and the outer platform location would result in smaller spill volumes due to reasons associated with the depth and pressure at those sites (Ref. 501).

Discussions with RPS suggested that using a constant release rate based on the volume and duration of release would be representative given the conservatism built into the initial spill release volume calculations. In reality, the release rate is likely to decrease over time as the trunkline depressurises and as surrounding hydrostatic pressure from the water reduces the flow and volume.

8.1.2 Spill modelling

CAPL commissioned RPS to conduct spill modelling to inform the risk assessment associated with a major defect event.

Two models were used as part of the spill modelling: OILMAP-DEEP was used to simulate the nearfield multiphase plume rise dynamics from the subsea release, and a three-dimensional oil spill model (SIMAP) was used to simulate the drift, spread, weathering and fate of the spilled oil (Ref. 416). Modelling was conducted using a stochastic approach, where multiple simulations (using the same spill parameters) were conducted, but under varying meteorological and oceanographic conditions.

Table 8-2 summarises the model settings; Table 8-3 summarises the hydrocarbon properties for the trunkline condensate; and the modelled environmental thresholds are described in Table 8-4.

Table 8-2: Major defect spill scenario model settings

Parameter	Details	
Release Location	Nearshore trunkline	Middle trunkline
Latitude	21°35’33.44” S	20°44’51.66” S
Longitude	114°57’37.30” E	114°51’52.14” E
Water Depth	10 m	115 m
Oil type	Trunkline condensate	Jansz condensate
Simulation spill type	Subsea	
Simulation spill volume	3,000 m^3	4,000 m^3
Simulation spill duration	25 hours	7 hours
Total simulation duration	30 days	
Number of randomly selected spill simulation start times	100 per season (300 total)	
Seasons modelled	Summer (October to March) Transitional (April and September) Winter (May to August)	

Table 8-3: Physical properties and boiling point ranges for Trunkline condensate

Characteristic	Value			
Density	770.0 kg/m^3 (at 15 °C)			
Dynamic viscosity	1.248 cP (at 20 °C)			
Pour point	-24 °C			
API gravity	52.3 API			
Classification	Group I, non persistent oil			
Boiling point	Volatile <180 °C	Semi-volatile 180–265 °C	Low volatility 265–380 °C	Residual >380 °C
	62.1%	22.4%	12.8%	2.7%

Table 8-4: Hydrocarbon environmental thresholds

Environmental impact threshold	Hydrocarbon Ecological EMBA^	Hydrocarbon Social EMBA^	PASM*	Justification
Surface ≥1 g/m^2 (low)		✓	✓	In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the surface impact threshold for socio-economic effects at ≥1 g/m^2. This threshold is equivalent to ~1,000 L/km^2 or a layer thickness of ~1 µm. At this concentration, oil on the water surface is expected to be visible. The Bonn Agreement Oil Appearance Code (Ref. 40) describes a 0.3–5.0 µm thick oil layer as having a rainbow-coloured appearance. Due to this visibility, there is the potential to impact nature-based activities (such as tourism) via a reduction in aesthetics. In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the surface exposure threshold at ≥1 g/m^2. This threshold is used to establish a planning area for scientific monitoring (Ref. 366).
Surface ≥10 g/m^2 (moderate)	✓	✓		In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the surface impact threshold for ecological effects at ≥10 g/m^2. This threshold is equivalent to ~10,000 L/km^2 or a layer thickness of ~10 µm. The Bonn Agreement Oil Appearance Code (Ref. 40) describes a 5–50 µm thick oil layer as having a metallic appearance. This threshold is considered by NOPSEMA to approximate the lower limit of harmful effects to birds and marine mammals (Ref. 366). This threshold is consistent with observations ranging from physical oiling to toxicity effects for marine fauna within literature, including French et al. (Ref. 237), French-McCay (Ref. 238), Engelhardt (Ref. 222), Clark (Ref. 124), Geraci and St. Aubin (Ref. 249) and Jenssen (Ref. 296).
In-water (dissolved)			✓	In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the in-water (dissolved) exposure threshold at ≥10 ppb. This

Environmental impact threshold	Hydrocarbon Ecological EMBA^	Hydrocarbon Social EMBA^	PASM*	Justification
≥10 ppb (low)				threshold is used to establish a planning area for scientific monitoring (specifically, for water quality) (Ref. 366).
In-water (dissolved) ≥50 ppb (moderate)	✓	✓		Laboratory studies have shown that dissolved oil exert most of the toxic effects of oil on aquatic biota (e.g. Carls et al. [Ref. 119], Nordtug et al. [Ref. 375], Redman [Ref. 401]). Being soluble, the dissolved oil can be taken up by organisms directly from the water column by absorption through external surfaces and gills, as well as through the digestive tract. In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the in-water (dissolved) impact threshold for sublethal ecological effects at ≥50 ppb. This threshold is considered by NOPSEMA to approximate potential toxic effects, particularly sublethal effects to sensitive species (Ref. 366). This threshold is based on an instantaneous concentration, and therefore only requires the dissolved oil to be at this concentration for one-hour (based on minimum model time-step) to trigger this threshold.
In-water (dissolved) ≥4,800 ppb.hrs (moderate)				Toxicity is the relative ability of a substance to cause adverse effects; and this relative ability is dependent on factors including both dose and duration. As such, CAPL has set the in-water (dissolved) impact threshold for lethal ecological effects at ≥4,800 ppb.hrs. This threshold is based on the instantaneous concentration (50 ppb) recommended by NOPSEMA but also applies a duration component of 96 hours. Therefore, dissolved oil needs to be at this concentration consistently for 96 hours to trigger this threshold. French-McCay (Ref. 240) reviewed toxicity data for marine biota exposed to dissolved oil and found that 95% of species and life stages exhibited 50% population mortality (LC50) for total PAH concentrations between 6–400 ppb (with an average of 50 ppb) after 96 hours exposure.
In-water (entrained) ≥10 ppb (low)			✓	In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the in-water (entrained) exposure threshold at ≥10 ppb. This threshold is used to establish a planning area for scientific monitoring (specifically, for water quality) (Ref. 366).
In-water (entrained) ≥100 ppb (high)	✓	✓		Entrained oil are insoluble droplets suspended in the water column, and as such exposure pathways are direct contact with external tissue or direct oil consumption. In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the in-water

Environmental impact threshold	Hydrocarbon Ecological EMBA^	Hydrocarbon Social EMBA^	PASM*	Justification
				(entrained) impact threshold for sublethal ecological effects at ≥100 ppb. This threshold is considered by NOPSEMA as appropriate for informing risk evaluation (Ref. 366). This threshold is based on an instantaneous concentration, and therefore only requires the entrained oil to be at this concentration for one-hour (based on minimum model time-step) to trigger this threshold. French-McCay (Ref. 239) identified that if total hydrocarbons in entrained oil droplets was to be evaluated as a risk, 100 ppb would be an extremely conservative sublethal threshold.
In-water (entrained) ≥9,600 ppb.hrs (high)				CAPL has set the in-water (entrained) impact threshold for lethal ecological effects at ≥9,600 ppb.hrs. This threshold is based on the instantaneous concentration (100 ppb) recommended by NOPSEMA but also applies a duration component of 96 hours. Therefore, entrained oil needs to be at this concentration consistently for 96 hours to trigger this threshold. It is however noted that entrained oil, especially when in weathered state, is typically not considered toxic.
Shoreline ≥10 g/m^2 (low)		✓	✓	In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the shoreline impact threshold for socio-economic effects at ≥10 g/m^2. This threshold is equivalent to ~10 mL/m^2 or ~2 teaspoons/m^2. At this concentration, oil on the shoreline is expected to be visible. Due to this visibility, there is the potential to impact nature-based activities (such as tourism or recreational use) via a reduction in aesthetics.
Shoreline ≥100 g/m^2 (moderate)	✓	✓		In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 366), CAPL has set the shoreline impact threshold for ecological effects at ≥100 g/m^2. This threshold is equivalent to ~100 mL/m^2 or 20 teaspoons/m^2. French et al. (Ref. 237) and French-McCay (Ref. 238) define shoreline oil accumulation at ≥100 g/m^2 as potentially harmful to wildlife (including invertebrates, birds, furbearing aquatic mammals and marine reptiles), based on studies for sub-lethal and lethal impacts. Impacts on vegetated habitats (such as saltmarsh and mangroves) have been observed at higher concentrations of shoreline oil. Observations by Lin and Mendelssohn (Ref. 318) demonstrated that loadings of >1,000 g/m^2 of oil during the growing season would be required to impact marsh plants significantly. Similar thresholds have been found in studies assessing oil impacts on mangroves (e.g. Grant et al. [Ref. 257], Suprayogi and Murray [Ref. 440]).

^ Environmental thresholds used to define the EMBA, and the presence of environmental values and sensitivities within this area have been identified in Section 4. These thresholds and the spatial extent of the EMBA is used as part of the environmental impact and risk assessment presented below.

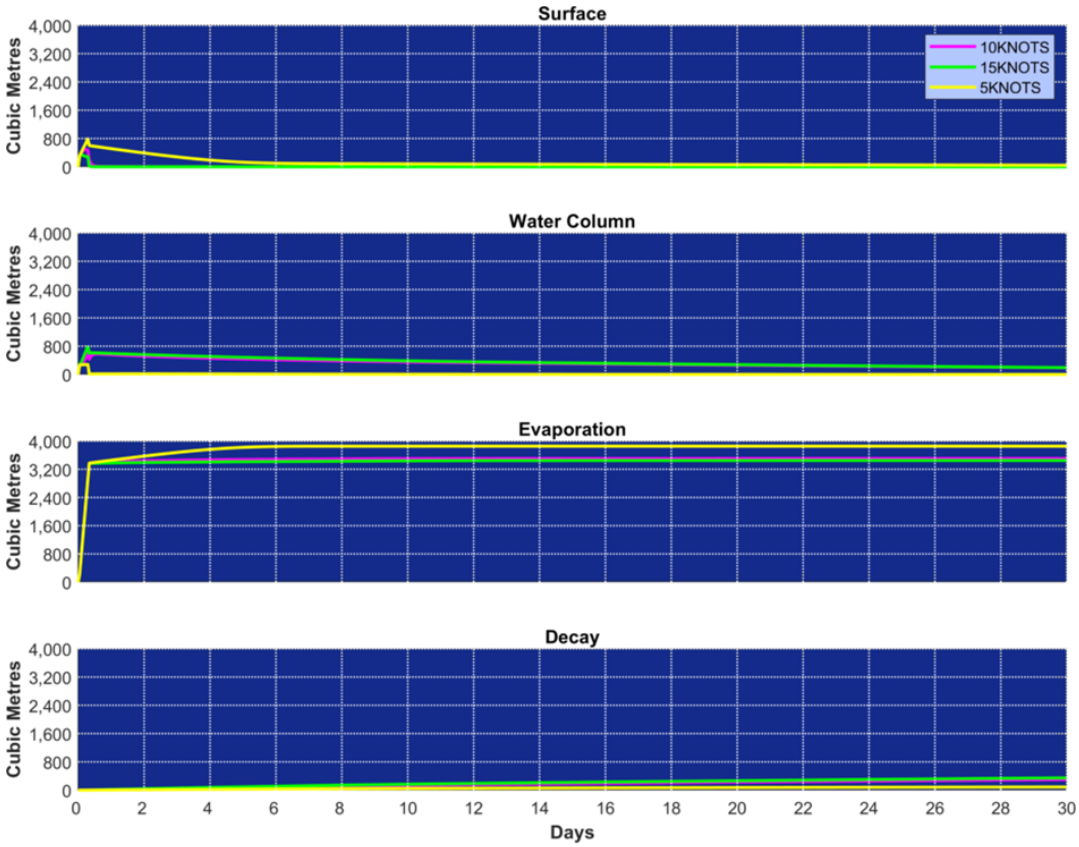
** Environmental thresholds used to define the PASM, and the presence of environmental values and sensitivities within this area have been identified within Appendix D of the OSMP (Ref. 101).*

8.1.2.1 Weathering and fate

The trunkline condensate is a mixture of several oil types (i.e. a mixture of oils originating from Wheatstone, Iago, and JDP). The trunkline condensate is non-persistent oil, with a density of 770.0 kg/m^3, an API of 52.3, and a low pour point (−24 °C) (Table 8-3). The low viscosity (1.248 cP) indicates that this oil will spread quickly when released and will form a thin film on the sea surface, increasing the evaporation rate.

Generally, 62.1% of the trunkline condensate mass should evaporate within the first 12 hours (boiling point <180 °C); a further 22.4% should evaporate within the first 24 hours (boiling point 180°C–265 °C); and an additional 12.8% should evaporate over several days (boiling point 265°C–380 °C). Approximately 2.7% (by mass) of the trunkline condensate will not evaporate at atmospheric temperatures. These compounds will persist in the environment.

Figure 8-1 shows predicted weathering for a subsea release of 4,000 m^3 over 7 hours of the trunkline condensate (tracked for 30 days) under three static wind conditions. Predictions show that under all wind conditions, >80% of the slick volume evaporated within the initial 24 hours, demonstrating the highly evaporative nature of this condensate once on the sea surface.



(Source: Ref. 416)

Figure 8-1: Predicted weather of a subsea release of 4,000 m^3 over 7 hours under three static wind conditions

8.1.2.2 Modelling outputs

Stochastic modelling outputs from RPS (Ref. 416) are summarised in Table 8-5 having regard to the particular values and sensitivities within the EMBA as identified in Section 4.

For the 3,000 m^3 nearshore trunkline FBR:

- The maximum distance from the release location to the ≥1 g/m^2 visible impact threshold was ~47 km west-southwest (winter), and ~14 km west-southwest (winter) for the ≥10 g/m^2 impact threshold.
- The probability of contact to any shoreline at ≥10 g/m^2 was 46%, 59% and 88% in summer, transitional and winter months, respectively. The minimum time before shoreline contact was ~1 hour and the maximum volume of oil ashore was ~225.7 m^3 (winter). The maximum length of shoreline exposed at ≥10 g/m^2 was ~6 km, at ≥100 g/m^2 was ~5 km, and at ≥1,000 g/m^2 was ~2 km (all occurring during winter).
- Dissolved oil at ≥50 ppb impact threshold was predicted to occur; however, remained in the surface layers (<20 m water depth) only. Dissolved oil at ≥4,800 ppb.hrs impact threshold was predicted to occur; however, remained in the surface layer (<10 m water depth) only.
- Entrained oil at ≥100 ppb impact threshold was predicted to occur; however, remained in the surface layers (<20 m water depth during summer; <10 m water depth during winter and transitional) only. Entrained oil at ≥9,600 ppb.hrs impact threshold was predicted to occur; however, remained in the surface layer (<10 m water depth) only.

For the 4,000 m^3 middle trunkline FBR:

- The maximum distance from the release location to the ≥1 g/m^2 visible impact threshold was ~61 km south (summer), and ~55 km west-southwest (transitional) for the ≥10 g/m^2 impact threshold.
- No shoreline accumulation above impact thresholds was predicted to occur during any season.
- Dissolved oil at ≥50 ppb impact threshold was predicted to occur; however, remained in the surface layers (<20 m water depth) only. Dissolved oil at ≥4,800 ppb.hrs impact threshold was predicted to occur; however, remained in the surface layer (<10 m water depth) only.
- Entrained oil at ≥100 ppb impact threshold was predicted to occur; however, remained in the surface layers (<20 m water depth) only. Entrained oil at ≥9,600 ppb.hrs impact threshold was predicted to occur; however, remained in the surface layer (<10 m water depth) only.

Table 8-5: Major defect spill modelling EMBA receptor exposure summary

Sensitivity	Name	Surface^		In-water (dissolved)^		In-water (entrained)^		Shoreline^	
		≥1 g/m²	≥10 g/m²	≥50 ppb	≥4,800 ppb.hrs	≥100 ppb	≥9,600 ppb.hrs	≥10 g/m²	≥100 g/m²
		(probability of exposure, minimum time to exposure)		(probability of exposure)		(probability of exposure)		(probability of exposure, minimum time to exposure, mean length of shoreline)	
AMP	Gascoyne	—	—	0–1%	—	0–7%	0–1%	—	—
	Montebello	—	—	—	—	0–2%	0–1%	—	—
	Ningaloo	—	—	—	—	0–10%	0–1%	—	—
KEF	Ancient coastline at 125 m depth contour	0–100%, ~1 hour	0–100%, ~1 hour	0–82%	0–74%	0–73%	0–75%	—	—
	Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	0–21%, ~1 hour	0–4%, ~0.75 days	0–1%	—	0–17%	0–1%	—	—
	Commonwealth waters adjacent to Ningaloo Reef	—	—	—	—	0–10%	0–1%	—	—
	Continental slope demersal fish communities	—	—	0–8%	—	0–35%	0–15%	—	—
	Exmouth Plateau	—	—	—	—	0–3%	—	—	—
	Glomar Shoals	—	—	—	—	—	—	—	—
World Heritage Properties / National Heritage Places	The Ningaloo Coast *(inferred from Cape Range IBRA)*	0–100%, ~1 hour	0–82%, ~1 hour	0–100%	0–92%	0–100%	0–2%	—	—
Commonwealth Heritage Properties	Ningaloo Marine Area – Commonwealth Waters *(inferred from Ningaloo IMCRA)*	—	—	0–6%	—	0–12%	0–1%	—	—

^ *Values shown represent the variation in probability, shortest minimum time to exposure, and longest mean length of shoreline from both scenarios modelled. Actual probabilities of exposure for listed sensitivities vary greatly between each individual scenario and season.*

8.1.3 Risk assessment

Source

The operation of the subsea hydrocarbon system has the potential for an unplanned release of gas, condensate, control fluid, or MEG to occur. Based on the activities described in this EP, the following potential scenarios were identified:

- LOC event[1]
- loss of well integrity[2]
- minor or major defect in flowline or production pipeline[3]

[1] Corrosion or mechanical failure/damage of flowlines or subsea values may result in a release of condensate, control fluids, or MEG. CAPL defined the worst-case credible scenario as a ~58 m^3 release of condensate from a flowline. This scenario is risk assessed within Section 7.1.4.

[2] As detailed in Section 8.1.1.2, a loss of well integrity scenario will result in a release limited to the volume of the production tubing conduit between the SCSSV flapper valve and the wellhead. This equates to 20.5 m^3 for Wheatstone wells, 18.8 m^3 for Iago wells, and 5.5 m^3 for JDP wells.

[3] As detailed in Section 8.1.1.5, modelling indicates that a subsea release of up to 3,710 m^3 could result from a major defect scenario.

Potential impacts and risks

Impacts	C	Risks	C
N/A	—	The potential environmental impacts associated with hydrocarbon exposures from a vessel collision event are:	
		• marine pollution resulting in acute and chronic impacts to marine fauna	5
		• smothering of subtidal and intertidal habitats	5
		• indirect impacts to commercial fisheries	5
		• reduction in amenity resulting in impacts to tourism and recreation.	5

Consequence evaluation

Marine pollution resulting in acute and chronic impacts to marine fauna

Marine mammals

Marine mammals may be exposed to hydrocarbons from an oil spill at the water surface or within the water column. Marine mammals can be exposed to oil externally (e.g. swimming through surface slick) or internally (e.g. swallowing the oil, consuming oil-affected prey, or inhaling of volatile oil related compounds) (Ref. 26; Ref. 285).

Direct contact with hydrocarbons may result in skin and eye irritation, burns to mucous membranes of eyes and mouth, and increased susceptibility to infection (Ref. 250). However, direct contact with surface oil is considered to have little deleterious effect on whales, possibly due to the skin's effectiveness as a barrier. Furthermore, effect of oil on cetacean skin is probably

minor and temporary (Ref. 250). French-McCay (Ref. 241) identifies that a ≥10 g/m^2 oil thickness threshold has the potential to impart a lethal dose to the species; however, also estimates a probability of 0.1% mortality to cetaceans if they encounter these thresholds based on the proportion of the time spent at surface.

The physical impacts from ingested hydrocarbons with subsequent lethal or sublethal impacts are applicable; however, the susceptibility of cetaceans varies with feeding habits. Baleen whales are not particularly susceptible to ingestion of oil in the water column as they feed by skimming the surface (i.e. they are more susceptible to surface slicks). Toothed whales and dolphins may be susceptible to ingestion of dissolved and entrained oil as they gulp feed at depth. As highly mobile species, in general it is very unlikely that these animals will be constantly exposed to concentrations of hydrocarbons in the water column for continuous durations (e.g. >48–96 hours) that would lead to chronic effects.

Studies have shown little impact on Bottlenose Dolphins after hydraulic and mineral oil immersion and ingestion, although there was evidence of temporary skin damage in dolphins and a Sperm Whale from contact with various oil products including crude oil (Ref. 250; Ref. 223).

Marine mammals are vulnerable if they inhale volatiles when they surface within a hydrocarbon slick. For the short period that they persist, vapours from the spill are a significant risk to mammal health, with the potential to damage mucous membranes of the airways and the eyes, which will reduce the health and potential survivability of an animal. Inhaled volatile hydrocarbons are transferred rapidly to the bloodstream and may also accumulate in tissues (Ref. 250).

Stochastic modelling was used to identify BIAs for marine mammals that may be exposed to hydrocarbon concentrations greater than impact thresholds within the EMBA. These were:

- Humpback Whale (migration, resting)
- Pygmy Blue Whale (migration, foraging)
- Dugongs (breeding, calving, foraging, nursing).

As these species are considered most sensitive to surface exposures, deterministic analysis for the largest sea surface swept area was utilised to understand the potential extent and duration of exposure. Of the scenarios modelled, (deterministic analysis from the middle trunkline 4,000 m^3 subsea condensate release was selected for use given it presents the most conservative surface hydrocarbon exposure extent. The maximum area for visible floating oil was predicted to occur ~1.75 days after the spill started and covered ~37 km^2. Using the Pygmy Blue Whale migration BIA as an example, modelling indicates that the extent of surface exposures was predicted to be limited to <1% of the entire BIA.

Based on an assessment of the predicted magnitude and duration of surface oil, and both instantaneous and time-integrated entrained oil, it is expected that only a small proportion of any marine mammal population would be exposed above the defined impact exposure thresholds. Therefore, the potential impacts of oil to cause sublethal or lethal effects was ranked as Incidental (6) and Minor (5), respectively.

Reptiles

Marine reptiles may be exposed to hydrocarbons from an oil spill at the water surface or on the shoreline. Marine reptiles can be exposed to oil externally (e.g. swimming through surface slick) or internally (e.g. swallowing the oil, consuming oil-affected prey, or inhaling of volatile oil related compounds) (Ref. 348).

Marine turtles are vulnerable to the effects of oil at all life stages: eggs, hatchlings, juveniles, and adults. Several aspects of turtle biology and behaviour place them at risk, including a lack of avoidance behaviour, indiscriminate feeding in convergence zones, and large pre-dive inhalations (Ref. 27). Oil effects on turtles can include impacts to the skin, blood, digestive, and immune systems, and increased mortality due to oiling.

Shoreline hydrocarbons can impact turtles coming ashore at nesting beaches. Eggs may also be exposed during incubation, potentially resulting in increased egg mortality and detrimental effects on hatchlings. Hatchlings may be particularly vulnerable to toxicity and smothering as they emerge from the nests and make their way over the intertidal area to the water (Ref. 348).

BIAs for the Flatback Turtle, Loggerhead Turtle, Green Turtle, and Hawksbill Turtle may be exposed to hydrocarbon concentrations greater than the impact thresholds. The behaviours associated with these BIAs include aggregation, basking, foraging, internesting, mating, and nesting.

The deterministic analysis for the largest volume of oil ashore (from the nearshore trunkline 3,000 m^3 condensate release) indicates that shoreline hydrocarbons concentrations ≥100 g/m^2 are present within ~2 days following the spill event, with a maximum volume ashore of ~225 m^3. Stochastic modelling also showed that the longest length of shoreline with exposure of ≥100 g/m^2

is ~5 km. Therefore, as the extent and duration of exposure to shorelines and associated nesting areas is expected to be limited, the potential for environmental impacts would also be limited.

Deterministic analysis for largest sea surface swept area indicates the maximum area for visible floating oil was predicted to occur ~1.75 days after the spill started and covered approximately 37 km^2 (from the 4,000 m3 middle trunkline scenario) Using the Hawksbill Turtle internesting BIA around Thevenard Island as an example, modelling indicates that the extent of surface exposures was predicted to be limited to <2% of the entire BIA. This information indicates that if a spill event occurred during the nesting season, it is unlikely to impact entire local nesting populations.

The EPBC threatened Short-nosed Sea Snake and Leaf-scaled Sea Snake, and other EPBC marine listed sea snake species, may be present within the EMBA. Oil pollution has been identified as a pressure 'of potential concern' (Ref. 218) to sea snakes[66]. Sea snakes are susceptible to oil on the sea surface (Ref. 218; Ref. 14; Ref. 476). Being air breathers and obligate bottom feeders oil may be either inhaled or ingested (Ref. 346; Ref. 244). As described above, surface oil exposure above impact thresholds are predicted to only be present for a short (<2 days) duration and over a relatively small (maximum ~5 km2) area. Any exposure to benthic habitats is only predicted to occur within nearshore (<20 m water depth) areas. Given there was no shoreline contact above impact thresholds predicted, and the spill scenarios are >55 km from the nearest shorelines, the duration and extent of exposure from a single spill event is predicted to be limited.

Based on an assessment of the predicted magnitude and duration of surface and shoreline oil, it is expected that only a small proportion of any marine reptile population would be exposed above the defined impact thresholds. Therefore, the potential impacts of oil to cause sublethal or lethal effects was ranked as Incidental (6) and Minor (5), respectively.

Fishes, including sharks and rays

Fish, including sharks and rays, may be exposed to hydrocarbons from an oil spill within the water column. Most fish do not break the sea surface, and therefore the risk from surface oil is not relevant; however, some shark species (including Whale Sharks) feed in surface waters, so there is also the potential for surface hydrocarbons to be ingested.

Potential effects include damage to the liver and lining of the stomach and intestine, and toxic effects on embryos (Ref. 317). Fish are most vulnerable to oil during embryonic, larval and juvenile life stages. However, very few studies have demonstrated increased mortality of fish as a result of oil spills (Ref. 236; Ref. 268; Ref. 284).

Demersal fish are not expected to be impacted given the presence of dissolved and entrained oil above impact thresholds is predicted only in the surface layers (<20 m water depth) only.

Pelagic free-swimming fish and sharks are unlikely to suffer long-term damage from oil spill exposure because dissolved/entrained hydrocarbons are typically insufficient to cause harm (Ref. 290). Pelagic species are also generally highly mobile and as such are not likely to suffer extended exposure (e.g. >48–96 hours) at concentrations that would lead to chronic effects due to their patterns of movement. Near the sea surface, fish can detect and avoid contact with surface slicks meaning fish mortalities rarely occur in the event of a hydrocarbon spill in open waters (Ref. 469). Fish that have been exposed to dissolved hydrocarbons can eliminate the toxicants once placed in clean water; hence, individuals exposed to a spill are likely to recover (Ref. 305). Marine fauna with gill-based respiratory systems, including Whale Sharks, are expected to have higher sensitivity to exposures of entrained oil.

BIAs for fishes including sharks and rays that may be exposed to hydrocarbon concentrations greater than impact thresholds include:

- Whale Shark (foraging).

As Whale Sharks are sensitive to both in water and surface hydrocarbon exposures, deterministic analysis for the largest sea surface swept area were analysed to provide an indication of the potential exposure and possible impact. Deterministic analysis for largest sea surface swept area the maximum area for visible floating oil was predicted to occur ~1.75 days after the spill started and cover ~37 km^2. Comparing this area to the Whale Shark foraging BIA, modelling indicates that the extent of surface exposures was predicted to be limited to <1% of the entire BIA.

Based on an assessment of the predicted magnitude and duration of surface oil, and both instantaneous and time-integrated entrained oil, it is expected that only a small proportion of any fish population would be exposed above the defined impact thresholds. Therefore, the potential

[66] The pressure analysis distinguished between oil pollution from shipping ('of less concern') and oil rigs ('of potential concern') (Ref. 218). Although the aspect source for this risk assessment is a spill from a vessel, the higher pressure concern has been adopted.

impacts of oil to cause sublethal or lethal effects was ranked as Incidental (6) and Minor (5), respectively.

Seabirds and shorebirds

Birds may be exposed to hydrocarbons from an oil spill at the water surface (e.g. foraging, resting) or on the shoreline (e.g. roosting, nesting).

Birds that rest at the water's surface (e.g. shearwaters) or surface-plunging birds (e.g. terns, boobies) are particularly vulnerable to surface hydrocarbons (Ref. 125; Ref. 27). Damage to external tissues, including skin and eyes, can occur, along with internal tissue irritation in lungs and stomachs (Ref. 385). Acute and chronic toxic effects may result where the product is ingested as the bird attempts to preen its feathers (Ref. 385).

Breeding BIAs for the Fairy Tern, Lesser Crested Tern, Roseate Tern, and Wedge-tailed Shearwater may be exposed to hydrocarbon concentrations greater than impact thresholds.

The deterministic analysis for the largest volume of oil ashore (from the 3,000 m^3 nearshore trunkline release) indicates that shoreline hydrocarbons concentrations ≥100 g/m^2 are present within ~2 days following the spill event, with a maximum volume ashore of ~225 m^3. Stochastic modelling also showed that the longest length of shoreline with exposure of ≥100 g/m^2 is ~5 km. Therefore, as the extent and duration of exposure to shorelines and associated breeding environments is expected to be limited, the potential for environmental impacts would also be limited.

Deterministic analysis for largest sea surface swept area the maximum area for visible floating oil was predicted to occur ~1.75 days after the spill started and cover ~37 km^2 (from the 4,000 m3 middle trunkline release). Using the Wedge-tailed Shearwater breeding BIA surrounding Thevenard Islands as an example, modelling indicates that the extent of surface exposures was predicted to be limited to <2% of the entire BIA. This information indicates that if a spill event occurred during the nesting season, it is unlikely to impact entire local nesting populations.

Based on an assessment of the predicted magnitude and duration of surface and shoreline oil, it is expected that only a small proportion of any seabird population would be exposed above the defined impact thresholds. Therefore, the potential impacts of oil to cause sublethal or lethal effects was ranked as Incidental (6) and Minor (5), respectively.

Smothering of subtidal and intertidal habitats

Coral

Direct contact of hydrocarbons to coral can cause smothering, resulting in a decline in metabolic rate, and may cause varying degrees of tissue decomposition and death. A range of impacts may also result from toxicity, including partial mortality of colonies, reduced growth rates, bleaching, and reduced photosynthesis (Ref. 428; Ref. 352).

Stochastic modelling predicted coral reefs associated with the following key values or sensitivities within the EMBA (Table 4-11) have the potential to be exposed to hydrocarbon concentrations above impact thresholds:

- Ningaloo Coast (World Heritage Property, National Heritage Place).

No surface exposure at the ≥10 g/m^2 impact threshold was predicted for the Ningaloo Coast area (Table 8-5). Therefore, impacts from smothering within intertidal areas due to surface oil is not expected to occur. The probability of exposure to dissolved (≥50 ppb) or entrained oil (≥100 ppb) at the Ningaloo Coast area varied (0–100%) depending on the spill location (Table 8-5); however, stochastic modelling showed all dissolved and entrained oil remained in the surface waters layers. As such, exposure to coral reefs in deeper waters at Ningaloo is not predicted to occur.

For assessment of other coral habitats that occur within the EMBA (e.g. around some of the Pilbara islands), the deterministic analysis for the largest sea surface swept area (from the 4.000 m^3 middle trunkline condensate scenario) indicates the maximum area for visible floating oil was predicted to occur ~1.75 days after the spill started and cover ~37 km^2. Given hydrocarbons are likely to wash ashore quickly in nearshore environments, exposure to intertidal habitats would likely be brief. As the extent and duration of exposure to nearshore environments is expected to be limited the potential for environmental impacts would also be limited.

Based on an assessment of the predicted magnitude and duration of surface oil, and both instantaneous and time-integrated entrained oil, it is expected that only a small proportion of any coral habitat would be exposed above the defined impact thresholds. Therefore, the potential impacts of oil to cause smothering was ranked as Minor (5).

Mangroves and intertidal mudflats

Shoreline hydrocarbons can have smothering and toxic effects on mangroves and intertidal mudflats. Acute and chronic impacts to the health of mangrove communities can occur via pneumatophore smothering and exposure to the toxic volatile fraction of the hydrocarbons

(Ref. 30). Intertidal mudflats, which are typically sheltered and have a large surface area for oil absorption, can trap oil, potentially causing toxicity impacts to infauna. Intertidal mudflats are very sensitive to oil pollution because the oil enters lower layers of the mudflats where a lack of oxygen prevents the oil from decomposing (Ref. 30).

Mangroves and intertidal mudflats associated with key values and sensitivities (e.g. the Ningaloo Coast; Table 4-11) within the EMBA were not predicted to be exposed to shoreline hydrocarbons above impact thresholds.

For assessment of other mangrove habitats that occur within the EMBA, the deterministic analysis for the largest volume of oil ashore (from the 3,000 m^3 nearshore trunkline release) indicates that shoreline hydrocarbons concentrations ≥100 g/m^2 are present within ~2 days following the spill event, with a maximum volume ashore of ~226 m^3. Stochastic modelling also showed that the longest length of shoreline with exposure of ≥100 g/m^2 is ~5 km, and ≥1,000 g/m^2 is ~2 km. Therefore, as the extent and duration of exposure to shorelines is expected to be limited the potential for environmental impacts would also be limited.

Based on an assessment of the predicted magnitude and duration of shoreline oil, it is expected that only a small proportion of any mangrove and intertidal habitat would be exposed above the defined impact thresholds. Therefore, the potential impacts of oil to cause smothering was ranked as Minor (5).

Indirect impacts to commercial fisheries

As identified in Section 4.4.1, several commercial fisheries have management areas and recent fishing effort recorded within the EMBA. Direct impacts commercially targeted fish species are expected to occur from in-water hydrocarbon exposures.

Stochastic modelling showed that when dissolved and entrained oil was predicted to occur above the impact thresholds, it remained in the surface layers (<20 m water depth) only. Although exposures above impact thresholds have the potential to affect the recruitment of targeted commercial and recreational fish species, any acute impacts are expected to be limited, given this event is singular, non-continuous, and will result in a limited volume of hydrocarbon being released over a short time. On this basis recruitment of targeted species is not expected to be impacted significantly given the extent of exposure to concentrations above impact thresholds are expected to be limited due to rapid dilution and dispersion upon release.

Spill events also have the potential to impact commercial fisheries through indirect impacts associated with tainting. Tainting is a change in the characteristic smell or flavour, and renders the catch unfit for human consumption or sale due to public perception. Tainting may not be a permanent condition but will persist if the organisms are continuously exposed; but when exposure is terminated, depuration will quickly occur (Ref. 1). Regardless of the small potential for tainting, customer perception that tainting has occurred may cause a larger impact then the direct impact itself. However, as this event is singular, non-continuous, and will result in a limited volume of hydrocarbon being released over a short time period, and the low persistence of the hydrocarbon in the environment, customer perceptions are not expected to be altered for a prolonged period.

Modelling predicts that inshore exposure would be limited, whilst offshore exposures are expected to dilute and disperse over a longer period of time. In both instances, it is expected that any impacts from this type of event would likely be short term in duration. Therefore, CAPL assesses the consequence to commercial fisheries as localised and short term and it is ranked as Minor (5).

Reduction in amenity resulting in impacts to tourism and recreation

Modelling predicts shoreline exposure ≥10 g/m^2 (visible impact threshold) has the potential to occur along parts of Ashburton, and several of the Pilbara inshore islands.

The deterministic analysis for the largest volume of oil ashore (from the 3,000 m^3 nearshore trunkline release) indicates that shoreline hydrocarbons concentrations ≥100 g/m^2 are present within ~2 days following the spill event, with a maximum volume ashore of ~225 m^3. Stochastic modelling also showed that the longest length of shoreline with exposure of ≥100 g/m^2 is ~5 km. Therefore, as the extent and duration of exposure to shorelines is expected to be limited the potential for environmental impacts would also be limited.

Shoreline loading can impact the visual amenity of coastal areas and limit beach access for users, impacting tourism and recreation activities. Although there is public access for many of the Pilbara islands, access would only be restricted for a limited time given modelling indicates the spatial and temporal extent of exposure s not expected to be prolonged.

However, given the short-term and localized disturbance to marine tourism and recreation activities, CAPL has ranked the consequence as Minor (5).

ALARP decision context justification
The operation of subsea production systems offshore is a well-practised nationally and internationally activity. The control measures to manage the risk associated with a major defect event are well defined via legislative requirements that are considered standard industry practice. These are well understood and implemented by the petroleum industry and CAPL. Specifically, CAPL has worked in the region for over 10 years, and has a demonstrated understanding of industry requirements and their operational implementation in these areas. During stakeholder consultation, no objections or claims were raised regarding major defect events arising from the activity. The risks associated with a major defect event are considered lower-order risks in accordance with Table 5-3. As such, CAPL would apply ALARP Decision Context A for this aspect.

Good practice control measures and source	
Control measure	**Source**
IM Plans	Inspections provide assurance that assets are in good condition and proactively identify maintenance or repair activities that may be required. The type and frequency of inspections of the subsea hydrocarbon system will be undertaken in accordance with the IM Plans (Ref. 493, Ref. 103). The IM Plans also requires that hydrocarbon system process monitoring (pressure, temperature and flow rates), fluid composition monitoring, and corrosion monitoring are undertaken. Inspection and monitoring results are assessed against acceptance criteria to allow early identification and management of potential anomalies through engineering assessment, maintenance, and repairs to ensure the integrity of the hydrocarbon system and prevent a LOC. Inspections are tracked via the CMMS.
Source control	Source control is part of the first actions taken to minimise the volume of hydrocarbon released and therefore reduce potential impacts and risks to the environment. CAPL has developed Emergence Operating Procedures (EOPs) (Ref. 118) that provides guidance to operations personnel to detect, isolate and stabilise non-routine events such as trunkline/flowline LOC scenarios.
Well handover	Should a loss of well integrity event occur for Wheatstone, Iago, Julimar or Brunello production wells, CAPL would implement the NOPSEMA-accepted WOMP. This would require a well handover between Wheatstone Operations and ABU Wells work group. Once the well is handed over to the ABU Wells work group, all well integrity remedial activities will be conducted in accordance with the NOSEPMA-accepted *Wheatstone Project: Producing Phase Well Operations Management Plan* (Ref. 92).
OPEP	Under the OPGGS(E)R and PSLER, NOPSEMA and DMPE require that the petroleum activity have an accepted OPEP or OSCP (respectively) in place before commencing the activity. If a major defect occurs, the OPEP will be implemented. CAPL has developed the *Chevron ABU Consolidated OPEP* (Ref. 102) to support all spill response activities across all its assets. This OPEP covers the response to hydrocarbon releases to marine or coastal environments (within both State and Commonwealth waters), from assets/activities under CAPL operational control, where a coordinated response may be required.
OSMP	The OSMP details the arrangements and capability in place for operational and scientific monitoring. Operational monitoring collects information about the oil spill to aid planning and decision making for executing spill response or clean-up operations. Scientific monitoring focuses on the environmental impact attributable to the spill or the associated response activities and informs requirements for remediation (if required).

	CAPL has developed an NOPSEMA-accepted OSMP (Ref. 101) to support all spill monitoring activities across all its assets.	
EMT	Section 9.3.8 details the emergency management arrangements in place to respond to an oil spill. CAPL will maintain capability and readiness to allow for the implementation of a sufficient response throughout all stages of an emergency. This includes maintaining EMT resourcing and training requirements, setting and meeting exercise frequency and planning requirements, and ensuring external Oil spill response organisations (OSRO) arrangements are in place to support the response.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	Analysis of the 2001 PARLOC database (Ref. 342) was used to evaluate the likelihood of a LOC from an individual offshore pipeline, which was determined to be equivalent to 0.189% per year (Ref. 61). This frequency was used as a guide to inform the likelihood of consequence. Because of the low probability of a major defect event, the likelihood of the event coinciding with the breeding or migration period of particular values and sensitivities, and the control measures in place, the likelihood of the worst-case environmental consequence occurring as described above was assessed as Remote (5).	
Risk level	Very low (9)	
Determination of acceptability		
Principles of ESD	The potential impact associated with this aspect would be short term, apply to some individuals, and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no additional evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements relevant for this aspect include: • *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 200) • *Conservation Advice Balaenoptera borealis Sei Whale* (Ref. 452) • *Conservation Advice Balaenoptera physalus Fin Whale* (Ref. 453) • *Conservation Management Plan for the Southern Right Whale 2011-2021* (Ref. 150) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129) • *National Recovery Plan for albatrosses and petrels (2022)* (Ref. 156) • *Conservation Advice for Sousa Sahulensis (Australian Humpback Dolphin)* (Ref. 170) • *Conservation Advice for Orcaella Heinsohni (Australian Snubfin Dolphin)* (Ref. 164) • *Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake*) (Ref. 213) • *Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)* (Ref. 214). • *Approved Conservation Advice for Pristis pristis (Largetooth sawfish)* (Ref. 163) • *North-west Marine Parks Network Management Plan* (Ref. 188).	
	Requirement	**Demonstration**

	Conservation Management Plan for the Blue Whale 2015–2025 No specific management action identified.	N/A.
	Conservation Advice Balaenoptera borealis Sei Whale No specific conservation action identified.	N/A.
	Conservation Advice Balaenoptera physalus Fin Whale No specific conservation action identified	N/A.
	National Recovery Plan for the Southern Right Whale (Eubalaena australis) *No specific management action identified.*	N/A.
	Conservation Advice Rhincodon typus Whale Shark No specific conservation action identified.	N/A.
	Recovery Plan for Marine Turtles in Australia Management action A4.2: Ensure spill risk strategies and response programs adequately include management for marine turtles and their habitats, particularly in reference to 'slow to recover habitats', e.g. nesting habitat, seagrass meadows or coral reefs.	Assessment of spill risk strategies is within scope of the OPEP (Ref. 102). Response and recovery of habitats and marine fauna is within the scope of the OSMP (Ref. 101). Therefore, this activity is not considered to be inconsistent with the Recovery Plan for Marine Turtles in Australia.
	Conservation Advice for Sousa sahulensis (Australian Humpback dolphin) Habitat loss and degradation: Comprehensively assess coastal development that is likely to have a significant impact on Australian humpback dolphins. For example, in areas identified as Habitat Critical to the Survival or inhabited by important populations of the species.	Activities described in this EP are located offshore and not within close proximity to coastal areas. Spill risk associated with the activity could impact coastal areas. Assessment of spill risk strategies, including completing a NEBA, is within scope of the OPEP (Ref. 102). Response and recovery of habitats and marine fauna is within the scope of the OSMP (Ref. 101). Therefore, this activity is not considered to be inconsistent with the Conservation Advice for *Sousa sahulensis.*
	Conservation Advice for Orcaella heinsohni (Australian Snubfin dolphin) Habitat loss and degradation: Comprehensively assess coastal development that is likely to have a significant impact on Australian Humpback dolphins. For example, in areas identified as Habitat Critical to the Survival or inhabited by important populations of the species.	Activities described in this EP are located offshore and not within close proximity to coastal areas. Spill risk associated with the activity could impact coastal areas. Assessment of spill risk strategies, including completing a NEBA, is

		within scope of the OPEP (Ref. 102). Response and recovery of habitats and marine fauna is within the scope of the OSMP (Ref. 101). Therefore, this activity is not considered to be inconsistent with the Conservation Advice for *Orcaella heinsohni*.
	Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)	N/A
	Conservation Advice for Pristis pristis (Largetooth sawfish) No specific action identified.	N/A
	North-west Marine Parks Network Management Plan The Plan requires that "[a]ctions required to respond to oil pollution incidents, including environmental monitoring and remediation, in connection with mining operations authorised under the OPGGS Act may be conducted in all zones. The Director should be notified in the event of an oil pollution incident that occurs within, or may impact upon, an Australian Marine Park and, so far as reasonably practicable, prior to a response action being taken within a marine park."	The Montebello Marine Park and Gascoyne Marine Park are a multiple use zone (IUCN VI). The control measures identified for the management of an unplanned release provide for the response to, and environmental monitoring and remediation of, an oil pollution incident. Requirements to report oil pollution incidents that occur within, or may impact upon, an AMP is included in Section 9.4.2. Therefore, this activity is not considered to be inconsistent with the *North-west Marine Parks Network Management Plan*.
Internal context	These CAPL environmental performance standards or procedures were deemed relevant for this aspect: • IM Plans (Ref. 103 and 493) • OPEP (Ref. 102) • OSMP (Ref. 101).	
External context	No objections or claims were raised regarding major defect events arising from the activity.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan. However, in alignment with Section 5.7, where the aspect is listed as threat to a protected matter, or identified as a concern to a listed conservation value, CAPL will define an acceptable level of impact that aligns with the objectives of these documents.	

<table>
<tr><td></td><td colspan="2">Objectives of the relevant documents are shown below.
<table><tr><th>Plan</th><th>Objective</th></tr><tr><td>Conservation Management Plan for the Blue Whale 2015–2025</td><td>Recovery objective: Minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list.
Interim objective 4: Anthropogenic threats are demonstrably minimised.</td></tr><tr><td>Recovery Plan for Marine Turtles in Australia</td><td>Recovery objective: The long-term recovery objective for marine turtles is to minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list.
Interim objective 3: Anthropogenic threats are demonstrably minimised.</td></tr><tr><td>National Recovery Plan for the Southern Right Whale (Eubalaena australis)</td><td>Long–term vision: The long-term vision for the recovery of the Southern Right Whale is that the population has increased in size to a level that the conservation status has improved, and the species no longer qualifies for listing as threatened under any of the EPBC Act listing criteria.
Interim objective 2: Anthropogenic threats are managed consistent with ecologically sustainable development principles to facilitate recovery of Southern Right Whales.</td></tr><tr><td>North-west Marine Parks Network Management Plan</td><td>As per Section 4.5.1</td></tr></table>Therefore, CAPL has defined the following acceptable levels of impact such that it is not inconsistent with these documents:
impacts from the petroleum activity are managed such that it would not prevent the long-term recovery of protected species
no adverse change to the values of the Australian Marine Parks.
CAPL considers that the petroleum activity, with the control measures as described for this aspect in place, meet this acceptable level. In particular that by managing the unplanned release, that the risk to marine fauna and/or values of the AMPs are also subsequently managed.</td></tr>
<tr><th>Environmental performance outcome</th><th>Performance standard / Control measure</th><th>Measurement criteria</th></tr>
<tr><td rowspan="2">No unplanned release of hydrocarbons / hazardous materials to the environment during petroleum activities</td><td>IM Plans
Inspection and maintenance will include, but not be limited to, visual or acoustic survey of the trunkline, in accordance with the IM Plans</td><td>CMMS records confirm a visual or acoustic survey of the subsea pipeline was undertaken in accordance with the IM Plans</td></tr>
<tr><td>IM Plans
Monitoring of hydrocarbon system pressure, temperature, flow rates and fluid composition against acceptable criteria and limits will be aligned with the IM Plans</td><td>Records confirm monitoring of hydrocarbon system pressure, temperature, flow rates and fluid composition against acceptable criteria and limits are aligned with the IM Plans</td></tr>
</table>

Reduce the risk of impacts to the environment from the unplanned release of hydrocarbons / hazardous materials during petroleum activities	**Source control** The isolation steps of the source control / isolation procedures implemented within 30 minutes if a spill is detected from the hydrocarbon system	Records demonstrate relevant isolation components of the source control procedures are implemented if a spill is detected from the hydrocarbon system
	Well handover In the event of a Wheatstone or Iago well integrity failure event, well custodianship is handed over from CAPL's Wheatstone Operations to the ABU Wells work group for management and subsequent remediation	Completed well handover certification confirms that the well has transferred into the custodianship of the ABU Wells work group
	OPEP In the event of a Level 2 (or above) oil spill occurring to marine or coastal waters, response activities are implemented in accordance with the *ABU Consolidated OPEP*	Records confirm the OPEP has been activated and response activities implemented
	OPEP CAPL will maintain the following minimum preparedness capability: number and type of response packages as identified in Table 8-11	Records confirm that CAPL has arrangements in place to access the minimum number and type of responses packages required
	OPEP—Oil spill response organisation (OSRO) Capability Arrangements CAPL shall maintain service agreements with oil spill response organisations (as per Section 9.3.8.6.3) that have capabilities to support a response to an oil spill event	Records confirm that service agreements are in place
	OPEP Refer to the ABU Consolidated OPEP for environmental performance outcomes, standards and measurement criteria related to emergency management, emergency preparedness, and each response tactic	
	OSMP In the event of a Level 2 (or above) oil spill occurring to marine or coastal waters, the OSMP will be activated, and: • operational and scientific monitoring program are initiated once the specific initiation criteria are met • operational and scientific monitoring program are implemented within the timeframes outlined in the OSMP • operational and scientific monitoring components are continued until respective termination criteria are met	Records confirm the OSMP has been activated
		Records confirm that once initial criteria have been met, operational and scientific monitoring programs were initiated.
		Records confirm that operational and scientific monitoring programs were implemented within the timeframes outlined in the OSMP.
		If any OSMP programs requiring vessels are activated, records demonstrate that CAPL EMT identified vessel availability through existing contracts within 12 hours of Operational and Scientific Monitoring Plan

		(OMSP) component initiation activation
		If any OSMP programs requiring aircraft are activated, records demonstrate that CAPL EMT identified aircraft availability through existing contracts within 12 hours of OMSP component initiation activation
		Records show CAPL EMT mobilised a minimum of one identified, contracted vessel within 24 hours to Onslow, Dampier or Barrow Island (subject to Barrow Island quarantine requirements)
		Records confirm that once termination criteria have been met, operational and scientific monitoring programs were ceased.
	OSMP Capability required to implement all operational and scientific monitoring programs are in place to meet the requirements outlined in the OSMP	Internal personnel capability is documented every six months in the ABU OSMP Capability Register.
		External contractors self-assess their capability against the requirements and provide a Statement of Personnel Capability and Readiness every six months
		Hydrocarbon characterisation sample kits are maintained at Barrow Island and Karratha.
CAPL will be prepared and ready to manage an oil spill event	**EMT** ABU EMT exercises, including exercises to test source control response arrangements, will be conducted in accordance with Section 9.3.8.7	Records confirm exercises are conducted
	EMT CAPL core and support EMT members will complete all hazards and oil spill training in accordance with the ABU Training and Exercise Program Procedure	Records confirm training is conducted
	EMT CAPL shall maintain an EMT duty roster with a minimum of 10 qualified EMT personnel to fulfil core CAPL EMT positions	EMT Duty Roster records
	EMT CAPL shall maintain the minimum required personnel within the ABU trained to fulfil core EMT functions as per Appendix F of the OPEP	Records confirm the minimum required personnel are trained
	EMT	Training / induction records

	During any oil spill response, ABU EMT support personnel, including mutual aid personnel, joining the CAPL EMT will be provided with training in accordance with the ABU Training and Exercise Program Procedure before they join the EMT	
	EMT CAPL shall maintain Service Level Agreement / membership with OSROs enabling the provision of technical specialists to supplement the CAPL EMT either directly or via industry mutual aid framework agreements	Service Level Agreement / Membership

8.2 Unplanned release—vessel collision event

8.2.1 Credible scenario

A vessel collision event within the OA is considered a credible (but unlikely) unplanned event. A major marine spill because of vessel collision is only likely to occur under exceptional circumstances (e.g. loss of DP, navigational error, inclement weather conditions). Given the location, water depths, and lack of submerged features within most of the OA, grounding is not considered credible, and is not considered further.

Based upon the types of vessels typically used for IMR activities (with the exception of major repairs), size of largest fuel tanks and fuel type to be utilised for the activities in this EP, CAPL was able to identify the typical credible worst-case scenario (as per AMSA guidelines; Ref. 15) as being a surface release of ~325 m^3 of MDO resulting from a vessel collision event. However, in the event that major repairs are undertaken, larger vessels would be required. Typical fuel tank sizes associated with construction or heavy lift vessels are expected to be in the order of ~1,000 m^3. Therefore, as a conservative approach to risk assessment for activities covered under this EP, these higher volumes have been used in the following analyses.

8.2.2 Spill modelling

CAPL commissioned RPS to conduct spill modelling to inform the risk assessment associated with a vessel collision event (Ref. 415).

The release location selected for use, while outside the OA for this EP, is considered an appropriate and conservative approach to inform the risk assessment given that the modelled release location is closer to sensitive shorelines.

A three-dimensional oil spill model (SIMAP) was used to simulate the drift, spread, weathering and fate of the spilled oil (Ref. 415). Modelling was conducted using a stochastic approach, where multiple simulations (using the same spill parameters) were conducted, but under varying meteorological and oceanographic conditions.

Table 8-6 summarises the model settings; Table 8-7 summarises the hydrocarbon properties for MDO; and Table 8-4 describe the modelled environmental exposure and impact thresholds respectively.

Table 8-6: Vessel collision spill scenario model settings

Parameter	Details
Release location	~17 km south of OA (field), and within the Montebello Marine Park
Latitude	20°09'22" S
Longitude	115°24'11" E
Water depth	~50–60 m
Oil type	MDO
Simulation spill type	Surface
Simulation spill volume	1,063 m^3 (based on the largest single tank)
Simulation spill duration	24 hours
Total simulation duration	50 days
Number of randomly selected spill simulation start times	100 per season (300 total)
Seasons modelled	Summer (December to February) Transitional (March, October, November) Winter (April to September)

Table 8-7: Physical properties and boiling point ranges for MDO

Characteristic	Value			
Density	829.1 kg/m3 (at 25 °C)			
Dynamic viscosity	4 cP			
Pour point	-14 °C			
API gravity	37.6 API			
Classification	Group II, light persistent oil			
Boiling point	Volatile <180 °C	Semi-volatile 180–265 °C	Low volatility 265–380 °C	Residual >380 °C
	6.0%	34.6%	54.4%	5.0%

8.2.2.1 Weathering and fate

MDO is a light-persistent fuel oil used in the maritime industry. It has a density of 829.1 kg/m^3, an API of 37.6, and a low pour point (−14 °C) (Table 8-5). The low viscosity (4 cP) indicates that this oil will spread quickly when released and will form a thin film on the sea surface, increasing the evaporation rate.

Generally, about 6.0% of the MDO mass should evaporate within the first 12 hours (boiling point <180 °C); a further 34.6% should evaporate within the first 24 hours (boiling point 180°C–265 °C); and an additional 54.4% should evaporate over several days (boiling point 265°C–380 °C). Approximately 5% (by mass) of MDO will not evaporate at atmospheric temperatures. These compounds will persist in the environment.

While MDO will typically remain on the water surface (where it is subject to evaporation), it is noted that some of the heavy components have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (i.e. >12 knots) and breaking waves but can re-float to the surface if these energies abate (Ref. 415).

8.2.2.2 Modelling outputs

Stochastic modelling outputs from RPS (Ref. 415) are summarised in Table 8-8 having regard to the particular values and sensitivities identified in Section 4.

For the 1,063 m^3 MDO release south of the OA:

- The maximum distance from the release location to the ≥1 g/m^2 visible impact threshold was ~64 km south-southwest (transitional), and ~38 km south-southwest (summer) for the ≥10 g/m^2 impact threshold.
- The probability of contact to any shoreline at ≥10 g/m^2 was 7% in summer, 1% in winter, and no contact predicted in transitional months. The minimum time before shoreline contact was ~3 days and the maximum volume of oil ashore was 24.4 m^3. The maximum length of shoreline exposed at ≥10 g/m^2 was ~27 km, and at ≥100 g/m^2 was ~10 km. No shoreline accumulation ≥1,000 g/m^2 was predicted to occur during any season.
- No dissolved oil at ≥50 ppb impact thresholds was predicted to occur during any season.
- Entrained oil at ≥100 ppb impact thresholds was predicted to occur. However, entrained oil was predicted to remain in the surface layers, with no exposure at depths >10 m below the surface predicted to occur during any season.

Table 8-8: Vessel collision spill modelling EMBA receptor exposure summary

Sensitivity	Name	Surface^		In-water (dissolved)^	In-water (entrained)^	Shoreline^	
		≥1 g/m²	≥10 g/m²	≥50 ppb	≥100 ppb	≥10 g/m²	≥100 g/m²
		(probability of exposure, minimum time to exposure)		(probability of exposure)	(probability of exposure)	(probability of exposure, minimum time to exposure, mean length of shoreline)	
AMP	Gascoyne	—	—	—	1–4%	—	—
	Montebello	100%, ~1 hour	100%, ~1 hour	—	89–97%	—	—
	Ningaloo	—	—	—	0–1%	—	—
KEF	Ancient coastline at 125 m depth contour	0–6%, ~0.75 days	—	—	19–30%	—	—
	Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	—	—	—	1–4%	—	—
	Commonwealth waters adjacent to Ningaloo Reef	—	—	—	0–1%	—	—
	Continental slope demersal fish communities	0–1%, ~2.7 days	—	—	9–27%	—	—
	Exmouth Plateau	—	—	—	0–2%	—	—
	Glomar Shoals	—	—	—	0–2%	—	—
World Heritage Properties / National Heritage Places	The Ningaloo Coast *(inferred from Cape Range IBRA, and Exmouth shoreline)*	—	—	—	0–2%	0–2%, ~14.4 days, ~3 km	—
Commonwealth Heritage Properties	Ningaloo Marine Area – Commonwealth Waters *(inferred from Ningaloo IMCRA)*	—	—	—	1–2%	—	—

^ *Ranges in values shown are due to the different results between seasons.*

8.2.3 Risk assessment

Source

Activities identified as having the potential to result in a vessel collision event are:

- vessels and IMR operations within the OA.

A vessel collision event may occur as a result of a loss of DP, navigational error or floundering due to weather.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	The potential environmental impacts associated with hydrocarbon exposures from a vessel collision event are:	
		• marine pollution resulting in sublethal or lethal effects to marine fauna	5
		• smothering of subtidal and intertidal habitats	5
		• indirect impacts to commercial fisheries	5
		• reduction in amenity resulting in impacts to tourism and recreation.	5

Consequence evaluation

Marine pollution resulting in sublethal or lethal effects to marine fauna

Marine mammals

Marine mammals may be exposed to hydrocarbons from an oil spill at the water surface or within the water column. Marine mammals can be exposed to oil externally (e.g. swimming through surface slick) or internally (e.g. swallowing the oil, consuming oil-affected prey, or inhaling of volatile oil related compounds) (Ref. 26; Ref. 285).

Direct contact with hydrocarbons may result in skin and eye irritation, burns to mucous membranes of eyes and mouth, and increased susceptibility to infection (Ref. 250). However, direct contact with surface oil is considered to have little deleterious effect on whales, possibly due to the skin's effectiveness as a barrier. Furthermore, effect of oil on cetacean skin is probably minor and temporary (Ref. 250). French-McCay (Ref. 241) identifies that a ≥10 g/m^2 oil thickness threshold has the potential to impart a lethal dose to the species; however, also estimates a probability of 0.1% mortality to cetaceans if they encounter these thresholds based on the proportion of the time spent at surface.

The physical impacts from ingested hydrocarbons with subsequent lethal or sublethal impacts are applicable; however, the susceptibility of cetaceans varies with feeding habits. Baleen whales are not particularly susceptible to ingestion of oil in the water column as they feed by skimming the surface (i.e. they are more susceptible to surface slicks). Toothed whales and dolphins may be susceptible to ingestion of dissolved and entrained oil as they gulp feed at depth. As highly mobile species, in general it is very unlikely that these animals will be constantly exposed to concentrations of hydrocarbons in the water column for continuous durations (e.g. >48–96 hours) that would lead to chronic effects.

Studies have shown little impact on Bottlenose Dolphins after hydraulic and mineral oil immersion and ingestion, although there was evidence of temporary skin damage in dolphins and a Sperm Whale from contact with various oil products including crude oil (Ref. 250; Ref. 223).

Marine mammals are vulnerable if they inhale volatiles when they surface within a hydrocarbon slick. For the short period that they persist, vapours from the spill are a significant risk to mammal health, with the potential to damage mucous membranes of the airways and the eyes, which will reduce the health and potential survivability of an animal. Inhaled volatile hydrocarbons are transferred rapidly to the bloodstream and may also accumulate in tissues (Ref. 250).

Stochastic modelling was used to identify BIAs for marine mammals that may be exposed to hydrocarbon concentrations greater than impact thresholds within the EMBA. These were:

- Humpback Whale (migration, resting)
- Pygmy Blue Whale (distribution, migration, foraging)
- Dugongs (breeding, calving, foraging, nursing).

As these species are considered most sensitive to surface exposures, deterministic analyses were utilised to understand the potential extent and duration of exposure.

The deterministic model for the worst-case trajectory for Montebello Islands indicates that surface hydrocarbons concentrations ≥1 g/m^2 (i.e. visible threshold) are present for <5 days following the spill event, with a maximum area of coverage of ~99 km^2 occurring 18 hours after the spill commenced. This deterministic scenario is considered most relevant for offshore waters, and subsequent impacts to offshore BIA's in those regions. Using the Pygmy Blue Whale migration BIA as an example, modelling indicates that the extent of surface exposures was predicted to be limited to <1% of the entire BIA.

The deterministic model for the worst-case trajectory for Ningaloo World Heritage area indicates that surface hydrocarbons concentrations ≥1 g/m^2 (i.e. visible threshold) are present for <2 days following the spill event, with a maximum area of coverage of ~32 km^2 occurring 18 hours after the spill commenced. This deterministic scenario is considered most relevant for nearshore waters around Ningaloo and Exmouth Gulf, and subsequent impacts to nearshore BIA's in those regions. Using the Dugong breeding BIA as an example, modelling indicates that the extent of surface exposures was predicted to be limited to <1% of the entire BIA. As the extent and duration of exposure to nearshore environments is expected to be limited the potential for environmental impacts would also be limited. However, it is acknowledged that behaviours in nearshore waters are likely to result in increased sensitivity to hydrocarbon exposures as species are less likely to be transient.

Based on an assessment of the predicted magnitude and duration of surface oil, and entrained oil, it is expected that only a small proportion of any marine mammal population would be exposed above the defined impact exposure thresholds. Therefore, the potential impacts of oil to cause sublethal or lethal effects was ranked as Incidental (6) and Minor (5), respectively.

Reptiles

Marine reptiles may be exposed to hydrocarbons from an oil spill at the water surface or on the shoreline. Marine reptiles can be exposed to oil externally (e.g. swimming through surface slick) or internally (e.g. swallowing the oil, consuming oil-affected prey, or inhaling of volatile oil related compounds) (Ref. 348).

Marine turtles are vulnerable to the effects of oil at all life stages: eggs, hatchlings, juveniles, and adults. Several aspects of turtle biology and behaviour place them at risk, including a lack of avoidance behaviour, indiscriminate feeding in convergence zones, and large pre-dive inhalations (Ref. 27). Oil effects on turtles can include impacts to the skin, blood, digestive, and immune systems, and increased mortality due to oiling.

Shoreline hydrocarbons can impact turtles coming ashore at nesting beaches. Eggs may also be exposed during incubation, potentially resulting in increased egg mortality and detrimental effects on hatchlings. Hatchlings may be particularly vulnerable to toxicity and smothering as they emerge from the nests and make their way over the intertidal area to the water (Ref. 348).

BIAs for the Flatback Turtle, Loggerhead Turtle, Green Turtle, and Hawksbill Turtle may be exposed to hydrocarbon concentrations greater than the impact thresholds. The behaviours associated with these BIAs include aggregation, basking, foraging, internesting, mating, and nesting.

Montebello Islands was the only area predicted to be exposed to shoreline hydrocarbons accumulation of ≥100 g/m^2. These islands are identified as habitat critical to the survival of Flatback, Green and Hawksbill turtles (Table 4-10). As such, nesting adult turtles and hatchlings may be exposed as they traverse the intertidal area, resulting in potential smothering and acute impacts to some hatchlings during that nesting season.

The deterministic model for the worst-case trajectory for Montebello Islands indicates that surface hydrocarbons concentrations ≥1 g/m^2 (i.e. visible threshold) are present for <5 days following the spill event, with a maximum area of coverage of ~99 km^2 occurring 18 hours after the spill commenced. This deterministic run also predicted the largest volume of oil ashore as ~24 m^3, and the maximum length of shoreline exposed to ≥100 g/m^2 was ~10 km occurring ~4 days after the spill commenced. Using the Flatback Turtle internesting and nesting BIAs around Montebello Islands as an example, modelling indicates that the extent of surface and shoreline exposures was predicted to be limited to <1% of the entire BIA, or <1% of the coastline. This information indicates that if a vessel spill event occurred during the nesting season, it is unlikely to impact entire local nesting populations.

The EPBC threatened Short-nosed Sea Snake and Leaf-scaled Sea Snake, and other EPBC marine listed sea snake species, may be present within the EMBA. Oil pollution has been identified as a pressure 'of potential concern' (Ref. 218) to sea snakes[67]. Sea snakes are susceptible to oil on the sea surface (Ref. 218; Ref. 14; Ref. 476). Being air breathers and obligate bottom-feeders oil may be either inhaled or ingested (Ref. 346; Ref. 244). As described above, surface oil exposure above impact thresholds are predicted to only be present for a short (<2 days) duration and over a relatively small (maximum ~5 km^2) area. Any exposure to benthic habitats is only predicted to occur within nearshore (<20 m water depth) areas. Given there was no shoreline contact above impact thresholds predicted, and the spill scenarios are >55 km from the nearest shorelines, the duration and extent of exposure from a single spill event is predicted to be limited.

Based on an assessment of the predicted magnitude and duration of surface and shoreline oil, it is expected that only a small proportion of any marine reptile population would be exposed above the defined impact thresholds. Therefore, the potential impacts of oil to cause sublethal or lethal effects was ranked as Incidental (6) and Minor (5), respectively.

Fishes, including sharks and rays

Fish, including sharks and rays, may be exposed to hydrocarbons from an oil spill within the water column. Most fish do not break the sea surface, and therefore the risk from surface oil is not relevant; however, some shark species (including Whale Sharks) feed in surface waters, so there is also the potential for surface hydrocarbons to be ingested.

Potential effects include damage to the liver and lining of the stomach and intestine, and toxic effects on embryos (Ref. 317). Fish are most vulnerable to oil during embryonic, larval and juvenile life stages. However, very few studies have demonstrated increased mortality of fish as a result of oil spills (Ref. 236; Ref. 268; Ref. 284).

Demersal fish are not expected to be impacted given the presence of entrained oil ≥100 ppb is predicted in the surface layers (<10 m water depth) only.

Pelagic free-swimming fish and sharks are unlikely to suffer long-term damage from oil spill exposure because dissolved/entrained hydrocarbons are typically insufficient to cause harm (Ref. 290). Pelagic species are also generally highly mobile and as such are not likely to suffer extended exposure (e.g. >48–96 hours) at concentrations that would lead to chronic effects due to their patterns of movement. Near the sea surface, fish can detect and avoid contact with surface slicks meaning fish mortalities rarely occur in the event of a hydrocarbon spill in open waters (Ref. 469). Fish that have been exposed to dissolved hydrocarbons can eliminate the toxicants once placed in clean water; hence, individuals exposed to a spill are likely to recover (Ref. 305). Marine fauna with gill-based respiratory systems, including Whale Sharks, are expected to have higher sensitivity to exposures of entrained oil.

BIAs for fishes including sharks and rays that may be exposed to hydrocarbon concentrations greater than impact thresholds include:

- Whale Shark (foraging).

As these species are considered most sensitive to surface exposures, deterministic analyses were utilised to understand the potential extent and duration of exposure.

The deterministic model for the worst-case trajectory for Montebello Islands indicates that surface hydrocarbons concentrations ≥1 g/m^2 (i.e. visible threshold) are present for <5 days following the spill event, with a maximum area of coverage of ~99 km^2 occurring 18 hours after the spill commenced. This deterministic scenario is considered most relevant for offshore waters, and subsequent impacts to offshore BIA's in those regions. Using the Whale Shark foraging BIA, modelling indicates that the extent of surface exposures was predicted to be limited to <1% of the entire BIA.

Based on an assessment of the predicted magnitude and duration of surface oil, and both instantaneous and time-integrated entrained oil, it is expected that only a small proportion of any fish population would be exposed above the defined impact thresholds. Therefore, the potential impacts of oil to cause sublethal or lethal effects was ranked as Incidental (6) and Minor (5), respectively.

Seabirds and shorebirds

Birds that rest at the water's surface (e.g. shearwaters) or surface-plunging birds (e.g. terns, boobies) are particularly vulnerable to surface hydrocarbons (Ref. 125; Ref. 27). Damage to external tissues, including skin and eyes, can occur, along with internal tissue irritation in lungs

[67] The pressure analysis distinguished between oil pollution from shipping ('of less concern') and oil rigs ('of potential concern') (Ref. 218). Although the aspect source for this risk assessment is a spill from a vessel, the higher pressure concern has been adopted.

and stomachs (Ref. 385). Acute and chronic toxic effects may result where the product is ingested as the bird attempts to preen its feathers (Ref. 385).

Breeding BIAs for the Fairy Tern, Lesser Crested Tern, Roseate Tern, and Wedge-tailed Shearwater may be exposed to hydrocarbon concentrations greater than impact thresholds.

Montebello Islands was the only area predicted to be exposed to shoreline hydrocarbons accumulation of ≥100 g/m^2.

The deterministic model for the worst-case trajectory for Montebello Islands indicates that surface hydrocarbons concentrations ≥1 g/m^2 (i.e. visible threshold) are present for <5 days following the spill event, with a maximum area of coverage of ~99 km^2 occurring 18 hours after the spill commenced. This deterministic run also predicted the largest volume of oil ashore as ~24 m^3, and the maximum length of shoreline exposed to ≥100 g/m^2 was ~10 km occurring ~4 days after the spill commenced. Using the Wedge-tailed Shearwater breeding BIA around Montebello Islands as an example, modelling indicates that the extent of surface and shoreline exposures was predicted to be limited to <1% of the entire BIA, or <1% of the coastline. This information indicates that if a vessel spill event occurred during breeding season, it is unlikely to impact entire local nesting populations.

Based on an assessment of the predicted magnitude and duration of surface and shoreline oil, it is expected that only a small proportion of any seabird population would be exposed above the defined impact thresholds. Therefore, the potential impacts of oil to cause sublethal or lethal effects was ranked as Incidental (6) and Minor (5), respectively.

Smothering of subtidal and intertidal habitats

Coral, seagrass and macroalgae

The effects of physical contact on subtidal habitats are similar, and studies have shown that it can cause sublethal stress and reduced growth rates in seagrass (Ref. 507; Ref. 394), act as a barrier to diffusion of CO_2 across cell walls in macroalgae (Ref. 379), and a decline in metabolic rate and partial mortality in corals (Ref. 429; Ref. 353) and impair respiration and photosynthesis by symbiotic zooxanthellae (Ref. 393; Ref. 308). The recovery of benthic habitats can be slow, with studies following the Deepwater Horizon incident showing long-term non-acute effects of the spill on coral colonies seven years after the event (Ref. 251).

Stochastic modelling predicted coral reefs associated with the following key values or sensitivities within the EMBA (Table 8-8) have the potential to be exposed to hydrocarbon concentrations above impact thresholds:

- Ningaloo Coast (World Heritage Property, National Heritage Place).

Ningaloo Coast (World Heritage Property, National Heritage Place and Commonwealth Heritage Place) is known to support coral reef and macroalgae habitat (Section 4.6.1). Coral, seagrass, and macroalgae habitats are also known to occur around the Barrow and Montebello islands, and to a smaller extent around some of the other Pilbara inshore islands.

Stochastic modelling showed that in-water (entrained) hydrocarbons were predicted to remain within the surface layers only. Therefore, exposure to coral reefs in deeper waters are not predicted to occur. However, smothering of benthic habitat communities may occur if a surface slick occurs in the intertidal area.

The deterministic model for the worst-case trajectory for Montebello Islands indicates that surface hydrocarbons concentrations ≥1 g/m^2 (i.e. visible threshold) are present for <5 days following the spill event, with a maximum area of coverage of ~99 km^2 occurring 18 hours after the spill commenced. This deterministic run also predicted the largest volume of oil ashore as ~24 m^3, and the maximum length of shoreline exposed to ≥100 g/m^2 was ~10 km occurring ~4 days after the spill commenced.

The deterministic model for the worst-case trajectory for Ningaloo World Heritage area indicates that surface hydrocarbons concentrations ≥1 g/m^2 (i.e. visible threshold) are present for <2 days following the spill event, with a maximum area of coverage of ~32 km^2 occurring 18 hours after the spill commenced.

These deterministic scenarios are considered most relevant for nearshore waters and subsequent impacts to nearshore corals. Therefore, as the extent and duration of exposure to nearshore environments is expected to be limited the potential for environmental impacts would also be limited.

Based on an assessment of the predicted magnitude and duration of surface oil, and both instantaneous and time-integrated entrained oil, it is expected that only a small proportion of any coral habitat would be exposed above the defined impact thresholds. Therefore, the potential impacts of oil to cause smothering was ranked as Minor (5).

Mangroves and intertidal mudflats

Shoreline hydrocarbons can have smothering and toxic effects on mangroves and intertidal mudflats. Acute and chronic impacts to the health of mangrove communities can occur via pneumatophore smothering and exposure to the toxic volatile fraction of the hydrocarbons (Ref. 30). Intertidal mudflats, which are typically sheltered and have a large surface area for oil absorption, can trap oil, potentially causing toxicity impacts to infauna. Intertidal mudflats are very sensitive to oil pollution because the oil enters lower layers of the mudflats where a lack of oxygen prevents the oil from decomposing (Ref. 30).

Stochastic modelling predicted shoreline accumulation above the ≥100 g/m^2 impact threshold may occur at Montebello Islands during summer; but no accumulation ≥1,000 g/m^2 was predicted to occur. This higher threshold is typically associated with impacts to coastal vegetation communities (Table 8-5), and therefore, shoreline exposure to mangroves and intertidal mudflats is not discussed further.

Indirect impacts to commercial fisheries

As identified in Section 4.4.1, several commercial fisheries have management areas and recent fishing effort recorded within the EMBA. Direct impacts commercially targeted fish species are expected to occur from in-water exposures.

Stochastic modelling showed that there no dissolved oil above impact thresholds (≥50 ppb) was predicted to occur during any season. Entrained oil above impact thresholds (≥100 ppb) was predicted to occur; however, was predicted to remain in the surface layers, with no exposure at depths >10 m below the surface predicted to occur during any season.

Although exposures above impact thresholds have the potential to affect the recruitment of targeted commercial and recreational fish species, any acute impacts are expected to be limited, given this event is singular, non-continuous, and will result in a limited volume of hydrocarbon being released over a short time. On this basis recruitment of targeted species is not expected to be impacted significantly given the extent of exposure to concentrations above impact thresholds are expected to be limited due to rapid dilution and dispersion upon release.

Spill events also have the potential to impact commercial fisheries through indirect impacts associated with tainting. Tainting is a change in the characteristic smell or flavour, and renders the catch unfit for human consumption or sale due to public perception. Tainting may not be a permanent condition but will persist if the organisms are continuously exposed; but when exposure is terminated, depuration will quickly occur (Ref. 1). Regardless of the small potential for tainting, customer perception that tainting has occurred may cause a larger impact then the direct impact itself. However, as this event is singular, non-continuous, and will result in a limited volume of hydrocarbon being released over a short time period, and the low persistence of the hydrocarbon in the environment, customer perceptions are not expected to be altered for a prolonged period.

Modelling predicts that inshore exposure would be limited, whilst offshore exposures are expected to dilute and disperse over a longer period of time. In both instances, it is expected that any impacts from this type of event would likely be short term in duration. Therefore, CAPL assesses the consequence to commercial fisheries as localised and short term and it is ranked as Minor (5).

Reduction in amenity resulting in impacts to tourism and recreation

Modelling predicts shoreline exposure ≥10 g/m^2 (visible impact threshold) from a vessel spill event during summer has the potential to occur predominantly along Montebello and Barrow Islands, with smaller/patchier occurrences along some of the other Pilbara inshore islands and North West Cape coast, depending on the environmental conditions at the time of the event. Only a small area of Montebello Island was predicted to be exposed during winter, and no shoreline contact was predicted to occur during transitional) seasons.

The deterministic model for the worst-case trajectory for Montebello Islands indicates that the maximum length of shoreline oil above the visible impact threshold (≥10 g/m^2) at any given time was ~23 km, and the maximum volume of oil ashore was ~24 m^3.

Shoreline loading can impact the visual amenity of coastal areas and limit beach access for users, impacting tourism and recreation activities. However, given the short-term and localized disturbance to marine tourism and recreation activities, CAPL has ranked the consequence as Minor (5).

ALARP decision context justification

Support vessels commonly operate near each other during offshore surveys, and these activities are well-practised nationally and internationally.

The control measures to manage the risk associated with vessel collisions are well defined via legislative requirements that are considered standard industry practice. These are well

understood and implemented by the petroleum industry and CAPL. Specifically, CAPL has worked in the region for over 10 years, and has a demonstrated understanding of industry requirements and their operational implementation in these areas.

During stakeholder consultation, no objections or claims were raised regarding vessel collision scenarios arising from the activity.

The risks associated with a vessel collision are considered lower-order risks in accordance with Table 5-3. As such, CAPL would apply ALARP Decision Context A for this aspect.

Good practice control measures and source

Control measure	Source
Marine Standard	Chevron's *Marine Standard Non-Tankers: Corporate OE Standard* (Ref. 100) ensures that various legislative and Chevron requirements and activities necessary for safe, reliable, and efficient marine services are met. These requirements include ensuring that crew meet the minimum competency requirements for safely operating a vessel.
Maritime safety information	Maritime safety information, such as AUSCOAST navigational warnings, are issued by the Joint Rescue Coordination Centre (JRCC) Australia, part of AMSA. Under the *Navigation Act 2012* (Cth), the AHO is also responsible for maintaining and disseminating navigational charts and publications, including providing safety-critical information to mariners (including any change to prohibited/restricted areas, obstructions to surface navigation, etc.) via the Notice to Mariners system. Notice to Mariners can be permanent or temporary notifications. Where required for an IMR activities, AUSCOAST and/or Notice to Mariners will be issued; thus enabling other marine users to also safely plan their activities.
SOPEP / Shipboard Marine Pollution Emergency Plan	MARPOL 73/78 Annex I and Marine Order 91 (Marine pollution prevention – oil) requires that each vessel has an approved SOPEP in place. To prepare for a spill event, the SOPEP details: • response equipment available to control a spill event • review cycle to ensure that the SOPEP is kept up to date • testing requirements, including the frequency and nature of these tests. In the event of a spill, the SOPEP details: • reporting requirements and a list of authorities to be contacted • activities to be undertaken to control the discharge of oil procedures for coordinating with local officials.
OPEP	Under the OPGG(E)R and PSLER, NOPSEMA and DMPE require that the petroleum activity have an accepted OPEP or OSCP (respectively) in place before commencing the activity. If a vessel collision occurs, the OPEP will be implemented. CAPL has developed the *Chevron ABU Consolidated OPEP* (Ref. 102) to support all spill response activities across all its assets. This OPEP covers the response to hydrocarbon releases to marine or coastal environments (within both State and Commonwealth waters), from assets/activities under CAPL operational control, where a coordinated response may be required.
OSMP	The OSMP details the arrangements and capability in place for operational and scientific monitoring. Operational monitoring collects information about the oil spill to aid planning and decision making for executing spill response or clean-up operations. Scientific monitoring focuses on the environmental impact attributable to the spill or the associated response activities and informs requirements for remediation (if required). CAPL has developed an NOPSEMA-accepted OSMP (Ref. 101) to support all spill monitoring activities across all its assets.

Control of Work (CoW) process	CAPL's CoW process (Ref. 52) ensures that workplace safety and health hazards are assessed and managed. The work authorisation system is part of this process and includes simultaneous operations (SIMOPS) and hazard analysis. Where required under the CoW process, a SIMOPS Plan will be developed to identify and manage hazards arising from the activity and other CAPL planned petroleum activities when occurring within the same area (refer to Table 7-2).	
Vessel lights and signals	Marine Order 30—Prevention of collisions and section 176 of the *Navigation Act 2012* (Cth) gives effect to the COLREGS, which has lighting and signal requirements for vessels. These requirements include the use of appropriate lights and shapes to reflect the nature of vessel activities (e.g. restricted in the ability to manoeuvre, vessels underway, etc.). These requirements ensure other marine users in the vicinity are aware of the nature of the vessel activities.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A
Likelihood and risk level summary		
Likelihood	Based on industry data, vessel collisions are considered rare, with only 3% of all marine incidents that occurred in Australian waters between 2005 and 2012 associated with a vessel collision event. As most vessel collisions involve the LOC of a forward tank, which are generally double-lined and smaller than other tanks, the loss of the maximum credible volumes used in this scenario is unlikely. Considering the inherent low likelihood of a collision occurring, the safeguards in place, and enactment of the OPEP, the potential likelihood of causing the consequences described in this section is Remote (5)	
Risk level	Low (8)	
Acceptability summary		
Principles of ESD	The potential impact associated with this aspect would be short term, apply to some individuals, and consequently is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no additional evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements relevant for this aspect include: • *Navigation Act 2012* (Cth) • Marine Order 91, Marine Pollution Prevention – oil • Marine Order 30, Prevention of collisions • *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 200) • *Conservation Advice Balaenoptera borealis Sei Whale* (Ref. 452) • *Conservation Advice Balaenoptera physalus Fin Whale* (Ref. 453) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 454) • *National Recovery Plan for the Southern Right Whale* (Ref. 150) • *Conservation Advice for Sousa Sahulensis (Australian Humpback Dolphin)* (Ref. 170) • *Conservation Advice for Orcaella Heinsohni (Australian Snubfin Dolphin)* (Ref. 164) • *Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake)* (Ref. 213) • *Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)* (Ref. 214).	

	• *Approved Conservation Advice for Pristis pristis* (Largetooth sawfish) (Ref. 163) • *Recovery Plan for Marine Turtles in Australia* (Ref. 129) • *North-west Marine Parks Network Management Plan* (Ref. 188).	
	Requirement	**Demonstration**
	Navigation Act 2012 (Cth) Notice to Mariners.	Requirement to issue a Notice to Mariners has been incorporated into the **maritime safety information** control measure.
	Navigation Act 2012 (Cth) and Protection of the Sea (Prevention of Pollution from Ships) Act Marine Order 91 and Annex I of MARPOL 73/78.	Requirements for a vessel to have a SOPEP have been incorporated into the **SOPEP** control measure
	Marine Order 30 Gives effect to the Prevention of Collisions Convention.	Requirements for navigation, lights, and signals have been incorporated into the **Marine Standard** control measure.
	Conservation Management Plan for the Blue Whale 2015–2025 No specific management action identified.	N/A.
	Conservation Advice Balaenoptera borealis Sei Whale No specific conservation action identified.	N/A.
	Conservation Advice Balaenoptera physalus Fin Whale No specific conservation action identified	N/A.
	National Recovery Plan for the Southern Right Whale (Eubalaena australis) *No specific management action identified.*	N/A.
	Conservation Advice Rhincodon typus Whale Shark No specific conservation action identified.	N/A.
	Recovery Plan for Marine Turtles in Australia Management action A4.2: Ensure spill risk strategies and response programs adequately include management for marine turtles and their habitats, particularly in reference to 'slow to recover habitats', e.g. nesting habitat, seagrass meadows or coral reefs.	Assessment of spill risk strategies is within scope of the OPEP (Ref. 102). Response and recovery of habitats and marine fauna is within the scope of the OSMP (Ref. 101). Therefore, this activity is not considered to be inconsistent with the Recovery Plan for Marine Turtles in Australia.
	Conservation Advice for Sousa sahulensis (Australian Humpback dolphin) Habitat loss and degradation: Comprehensively assess coastal development that is likely to have	Activities described in this EP are located offshore and not within close proximity to coastal areas. Spill risk associated with the activity could impact coastal areas.

	a significant impact on Australian humpback dolphins. For example, in areas identified as Habitat Critical to the Survival or inhabited by important populations of the species.	Assessment of spill risk strategies, including completing a NEBA, is within scope of the OPEP (Ref. 102). Response and recovery of habitats and marine fauna is within the scope of the OSMP (Ref. 101). Therefore, this activity is not considered to be inconsistent with the Conservation Advice for *Sousa sahulensis.*
	Conservation Advice for Orcaella heinsohni (Australian Snubfin dolphin) Habitat loss and degradation: Comprehensively assess coastal development that is likely to have a significant impact on Australian Humpback dolphins. For example, in areas identified as Habitat Critical to the Survival or inhabited by important populations of the species.	Activities described in this EP are located offshore and not within close proximity to coastal areas. Spill risk associated with the activity could impact coastal areas. Assessment of spill risk strategies, including completing a NEBA, is within scope of the OPEP (Ref. 102). Response and recovery of habitats and marine fauna is within the scope of the OSMP (Ref. 101). Therefore, this activity is not considered to be inconsistent with the Conservation Advice for *Orcaella heinsohni*.
	Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)	N/A
	Conservation Advice for Pristis pristis (Largetooth sawfish) No specific action identified.	N/A
	North-west Marine Parks Network Management Plan The Plan requires that "[a]ctions required to respond to oil pollution incidents, including environmental monitoring and remediation, in connection with mining operations authorised under the OPGGS Act may be conducted in all zones. The Director should be notified in the event of an oil pollution incident that occurs within, or may impact upon, an Australian Marine Park and, so far as reasonably practicable, prior to a response action being taken within a marine park."	The Montebello Marine Park and Gascoyne Marine Park are a multiple use zone (IUCN VI). The control measures identified for the management of an unplanned release provide for the response to, and environmental monitoring and remediation of, an oil pollution incident. Requirements to report oil pollution incidents that occur within, or may impact upon, an AMP is included in Section 9.4.2. Therefore, this activity is not considered to be inconsistent with the *North-west Marine Parks Network Management Plan*.
Internal context	These CAPL management processes or procedures were deemed relevant for this aspect: • *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100) • OPEP (Ref. 102) • OSMP (Ref. 101).	

<table>
<tr><td>External context</td><td>No objections or claims were raised regarding a vessel collision event arising from the activity.</td></tr>
<tr><td>Defined acceptable level</td><td>These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.
However, in alignment with Section 5.7, where the aspect is listed as threat to a protected matter, or identified as a concern to a listed conservation value, CAPL will define an acceptable level of impact that aligns with the objectives of these documents.
Objectives of the relevant documents are shown below.
<table>
<tr><th>Plan</th><th>Objective</th></tr>
<tr><td>Conservation Management Plan for the Blue Whale 2015–2025</td><td>Recovery objective: Minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list.
Interim objective 4: Anthropogenic threats are demonstrably minimised.</td></tr>
<tr><td>Recovery Plan for Marine Turtles in Australia</td><td>Recovery objective: The long-term recovery objective for marine turtles is to minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list.
Interim objective 3: Anthropogenic threats are demonstrably minimised.</td></tr>
<tr><td>National Recovery Plan for the Southern Right Whale (Eubalaena australis)</td><td>Long–term vision: The long-term vision for the recovery of the Southern Right Whale is that the population has increased in size to a level that the conservation status has improved, and the species no longer qualifies for listing as threatened under any of the EPBC Act listing criteria.
Interim objective 2: Anthropogenic threats are managed consistent with ecologically sustainable development principles to facilitate recovery of Southern Right Whales.</td></tr>
<tr><td>North-west Marine Parks Network Management Plan</td><td>As per Section 4.5.1</td></tr>
</table>
</td></tr>
<tr><td></td><td>Therefore, CAPL has defined the following acceptable levels of impact such that it is not inconsistent with these documents:
• impacts from the petroleum activity are managed such that it would not prevent the long-term recovery of protected species
• no adverse change to the values of the Australian Marine Parks.
CAPL considers that the petroleum activity, with the control measures as described for this aspect in place, meet this acceptable level. In particular that by managing the unplanned release, that the risk to marine fauna and/or values of the AMPs are also subsequently managed.</td></tr>
</table>

Environmental performance outcome	Performance standard / Control measure	Measurement criteria
No unplanned release of hydrocarbons / hazardous materials to the environment during petroleum activities	**Marine standard** Vessels will meet the crew competency, navigation equipment, and radar requirements of the Chevron Marine Standard	Records indicate that vessels meet the crew competency, navigation equipment, and radar requirements of the Chevron Marine Standard
	Maritime safety information Where required, Notice to Mariners and/or AUSCOAST warnings are issued prior to commencing offshore IMR work	Record of lodgement of notification to relevant agency
	Vessel lights and signals Vessels will comply with the requirements of Marine Order 30 – Prevention of Collisions, appropriate to the nature of their operations.	Marine verification records indicate that vessel lights and signals were consistent with the requirements of COLREGS and the *Navigation Act 2012* (Cth) during the petroleum activity
	CoW process Where required, CAPL will develop and implement a SIMOPS Plan(s) to manage IMR activities that occur within the OA	Records indicate that the CoW process has been applied and where required, a SIMOPS Plan has been developed and in place before the activity commences
Reduce the risk of impacts to the environment from the unplanned release of hydrocarbons / hazardous materials during petroleum activities	**SOPEP** Marine vessels >400 T will carry on board a Shipboard Oil Pollution Emergency Plan (SOPEP) in accordance with MARPOL 73/78 Annex I – Prevention of Oil Pollution	OVIS report / ABU Marine OE Inspection Checklist confirms an approved SOPEP is on board marine vessels >400 T
		Inspection records (or similar) show drills conducted in accordance with SOPEP
	SOPEP In the event of a vessel-based spill event, emergency response activities will be implemented in accordance with the vessel SOPEP (or equivalent).	Records confirm that emergency response activities were implemented in accordance with the vessel SOPEP in the event of a vessel-based spill.
	OPEP In the event of a spill occurring, the OPEP will be implemented	Records confirm the OPEP has been implemented
	OSMP In the event of a spill occurring, the OSMP will be implemented	Records confirm the OSMP has been implemented
	OPEP In the event of a Level 2 (or above) oil spill occurring to marine or coastal waters, response activities are implemented in accordance with the *ABU Consolidated OPEP*	Records confirm the OPEP has been activated and response activities implemented
	OPEP	Records confirm that CAPL has arrangements in place to access the minimum

	CAPL will maintain the following minimum preparedness capability: number and type of response packages as identified in Table 8-12	number and type of responses packages required
	OPEP—Oil spill response organisation (OSRO) Capability Arrangements CAPL shall maintain service agreements with oil spill response organisations (as per Section 9.3.8.6.3) that have capabilities to support a response to an oil spill event	Records confirm that service agreements are in place
	OPEP Refer to the ABU Consolidated OPEP for environmental performance outcomes, standards and measurement criteria related to emergency management, emergency preparedness, and each response tactic	
	OSMP In the event of a Level 2 (or above) oil spill occurring to marine or coastal waters, the OSMP will be activated, and: • operational and scientific monitoring program are initiated once the specific initiation criteria are met • operational and scientific monitoring program are implemented within the timeframes outlined in the OSMP • operational and scientific monitoring components are continued until respective termination criteria are met	Records confirm the OSMP has been activated
		Records confirm that once initial criteria have been met, operational and scientific monitoring programs were initiated.
		Records confirm that operational and scientific monitoring programs were implemented within the timeframes outlined in the OSMP.
		If any OSMP programs requiring vessels are activated, records demonstrate that CAPL EMT identified vessel availability through existing contracts within 12 hours of OMSP component initiation activation
		If any OSMP programs requiring aircraft are activated, records demonstrate that CAPL EMT identified aircraft availability through existing contracts within 12 hours of OMSP component initiation activation
		Records show CAPL EMT mobilised a minimum of one identified, contracted vessel within 24 hours to Onslow, Dampier or Barrow Island (subject to Barrow Island quarantine requirements)
		Records confirm that once termination criteria have been met, operational and

		scientific monitoring programs were ceased.
	OSMP Capability required to implement all operational and scientific monitoring programs are in place to meet the requirements outlined in the OSMP	Internal personnel capability is documented every six months in the ABU OSMP Capability Register.
		External contractors self-assess their capability against the requirements and provide a Statement of Personnel Capability and Readiness every six months
		Hydrocarbon characterisation sample kits are maintained at Barrow Island and Karratha.

8.3 Spill response

8.3.1 Response option selection

8.3.1.1 Strategic NEBA

CAPL has developed a series of Strategic Net Environmental Benefit Analysis (NEBAs) (Ref. 82) using generalised scenarios that reflect the spill risks associated with all CAPL offshore WA operations. Hydrocarbons associated with spill events from all CAPL operations were grouped into oil types as defined by the International Tanker Owners Pollution Federation Ltd (ITOPF) classification system:

- Group 1 – including Iago, Wheatstone, and Jansz condensate; Wheatstone trunkline fluids; and Wheatstone flowline fluids
- Group 2 – including MDO, Gorgon condensate, Barrow Island crude, and Gorgon/Jansz mixed trunkline fluids
- Group 3 / 4 – including HFO and intermediate fuel oil (IFO) (depending on blend).

These NEBAs were developed as a pre-spill planning tool for all CAPL EPs, to facilitate response option selection and support the development of the overall response strategies by identifying and comparing the potential effectiveness and impacts of oil spill response options (Ref. 287). After considering the benefits and drawbacks of each response option on the ecological, social, and economic receptors within the EMBA, the response options that were determined to minimise the impacts to the environment and people were pre-selected.

8.3.1.2 Protection prioritisation process

CAPL has developed a Protection Prioritisation Process (PPP) (Ref. 80) to support decision making in the event of a significant spill event. The information within the PPP document is used to identify priorities for protection within the activity specific spill scenario(s) EMBA, such as that described in Section 4. The identification of priorities for protection assists in the identification of resources to be assessed within the strategic and operational NEBAs, as described above. The NEBA considers the protection priority values, the EMBA, and the various control measures, including their feasibility, likely success, environmental benefits, level of effectiveness and performance of response tactics. The output of the NEBA and the protection priorities identified will then guide the strategic direction of the response through informing decisions made around tactical planning and response option selection.

The PPP (Ref. 80) ranks receptors (natural or anthropogenic value or resource that is potentially sensitivity to marine oil pollution) using a 5 level scale (from Very Low (1) to Very High (5)) based on a number of factors, including their sensitivity and vulnerability to oil, their conservation status and the biological and socioeconomic importance of the receptor. The CAPL PPP (Ref. 80) aligns with WA Department of Transport (DoT) PPP (Ref. 205) and utilises the same shoreline cells to illustrate broad scale identification of sensitive areas.

Areas with high value receptors and at greatest risk of contact with oil (as indicated by stochastic modelling) are assigned a high protection priority and designated as priority planning areas. The process for identifying these areas (described in the PPP document [Ref. 80]) considers all High (4) and Very High (5) ranked shoreline cells where contact above the moderate exposure threshold (from stochastic

modelling across all seasons) is predicted within 4 days (96 hours). As described in the PPP (Ref. 80), the 4-day contact timeframe is based on the expected time it would take CAPL to develop and implement a Tactical Response Guide (TRG) for an area predicted to be impacted. For contact outside this timeframe, it expected that CAPL will have reasonable time to develop and implement a TRG prior to oil contacting the resource.

High and Very High value areas (DoT shoreline cells) identified for contact within this timeframe have been identified in Table 8-9 and Table 8-10 for the major defect and vessel collision events respectively. These priority planning areas, and the specific receptors identified within them, are considered to ensure that tactical planning and response option selection are appropriate.

Table 8-9: Priority panning areas for major defect spill scenario

Potential area of impact	Distance from source of spill	Shoreline values	Planned response tactics
DoT Shoreline Cell # 115 (Ashburton, Ashburton Island, Tortoise Island, Locker Island)	<2km	Turtles – BIAs including nesting Seabirds – BIAs including breeding Mangrove communities Coral and reef communities State and Commonwealth Managed Fisheries	Monitor, Evaluation and Surveillance Shoreline Protection and Deflection Shoreline Clean-up Oiled Wildlife Response
DoT Shoreline Cell # 326 (Serrurier Island, Flat Island, Table Island, Round Island)	20 km	Turtles – BIAs including nesting Seabirds – BIAs including breeding Coral and reef communities State and Commonwealth Managed Fisheries	Monitor, Evaluation and Surveillance Shoreline Protection and Deflection Shoreline Clean-up Oiled Wildlife Response
DoT Shoreline Cell # 325 (Thevenard Island)	13 km	Turtles – BIAs including nesting Seabirds – BIAs including breeding Coral and reef communities State and Commonwealth Managed Fisheries Tourism	Monitor, Evaluation and Surveillance Shoreline Protection and Deflection Shoreline Clean-up Oiled Wildlife Response

Table 8-10: Priority planning areas for vessel collision event spill scenario

Potential area of impact	Distance from source of spill	Shoreline values	Planned response tactics
DoT Shoreline Cell # 318 (Montebello Islands)	30 km	Turtles – BIAs including nesting Seabirds – BIAs including breeding Mangroves Coral and reef communities Australian Marine Park	Monitor, Evaluation and Surveillance Shoreline Clean-up Oiled Wildlife Response

8.3.2 Activity-specific response option selection

To select the appropriate response options for this EP, hydrocarbons applicable to the worst credible scenarios specific to this activity are:

- Group 1 – Wheatstone trunkline fluids
- Group 2 – MDO.

The outcomes of the Strategic NEBA are outlined in Table 6-1 of the OPEP (Ref. 102). Taking into account the priority planning areas identified in Table 8-9 and Table 8-10, the outcomes of the Strategic NEBA determined that the recommended response options proposed to be used for the spill scenarios associated with this EP include:

- Monitoring, Evaluation, and Surveillance (MES)
- Shoreline Protection and Deflection (SPD)
- Shoreline Clean-up (SHC).

These response options are carried out alongside Oiled Wildlife and Waste Management response tactics. CAPL does not consider Oiled Wildlife and Waste Management as separate response options as they are implemented as support tactics for all spill events in a manner that is commensurate to the level of impact and risk of that event.

8.3.3 CAPL existing spill response capability assessment

Based on the spill response arrangements that CAPL has in place across the business, the capability of these arrangements was determined. This process involved:

- identifying CAPL's existing response arrangements and the equipment and personnel available to CAPL under these arrangements
- defining the response package for each response option, and identifying the critical components for each response package (i.e. equipment or personnel that are limited in number and cannot be purchased or accessed readily)
- determining the number of critical components available to CAPL under existing arrangements
- Identify the number of response packages available to CAPL under existing arrangements
- defining the volume of hydrocarbons that could be recovered or treated per response package.

The outcome of this evaluation is included as Appendix C of the OPEP (Ref. 102).

8.3.3.1 CAPL project-specific capability requirement assessment

To understand the spill response capability required for this activity, CAPL assessed the worst-case credible spill event and used modelling to understand the number of packages per response technique that may be required to respond to that event. The steps involved in this assessment were:

2. Review the Strategic NEBA (Ref. 82) and priority planning areas to understand the planned response to an event.

3. Predict the average surface hydrocarbon volume per day; and average volume of hydrocarbon accumulated onshore per shoreline per day (if relevant) to calculate the number of response packages required per response strategy.
4. Review the number of response packages available to determine if the capability exists.

8.3.3.2 CAPL planned response major defect

In accordance with the Strategic NEBA (Ref. 82), the response strategies proposed to be used for this spill scenario and response package calculations are described below. Offshore containment and recovery (CAR) would not be effective because of the hydrocarbon properties (Group 1).

Implement MES response

A MES response will commence for a subsea release as soon as the spill is identified. This may range from very simplistic visual observation only, through to more involved monitoring and evaluating tactics. Appendix C of the OPEP (Ref. 102) has documented the arrangements that CAPL have in place to implement all the required MES tactics; therefore, this technique is not discussed further.

Implement an SPD response

Deterministic analysis for the largest volume of oil ashore indicates that 225.7 m^3 may wash ashore between day 1 and day 2 after release. The volume of oil ashore was used to support the planned response requirements—the volume of hydrocarbons that would need to be treated by an SPD response is directly correlated to the volume of oil that may wash ashore.

Based on Appendix C of the OPEP (Ref. 102), each protection team is expected to recover 15.6 m^3 of hydrocarbon per day. On the assumption that 225.7 m^3 washes ashore on the second day, CAPL would need up to 8 SPD packages available per day to implement the SPD response. Confirmation that CAPL has the arrangements in place to implement the required number of packages is provided in Table 8-11.

Despite confirmation of capability arrangements in place, it is unlikely an effective SPD response for all islands within these Priority Planning areas would be feasible given the time to shoreline contact. For example, modelling suggests that Ashburton Island would be impacted within one hour from release. It is plausible that shoreline contact on this island may occur before the Wheatstone EMT has been stood up. Rather, areas / islands that are further away from the release site (for example Serrurier and Thevenard Island) would be prioritised for a SPD response given there may be sufficient time to mobilise resources before shoreline contact occurs.

Implement an SHC response

For a spill event such as this (a non-continuous release), deterministic analysis indicates shoreline accumulation (if it occurs) occurs rapidly. CAPL will implement strategies to protect prioritised values and sensitivities; however, the focus would be on SHC operations.

Deterministic analysis for the largest volume of oil ashore indicates that 225.7 m^3 may wash ashore within ~2 days after release; and the maximum length of actionable shoreline oil was predicted to be ~3 km within ~1.875 days.

Based on Appendix C of the OPEP (Ref. 102), each SHC team is expected to recover 1.6 m^3 of hydrocarbon per day. If ten clean-up teams are mobilised on day 2

and used each day, all hydrocarbons can be recovered within 15 days. If required, these efforts could be ramped up as directed and informed by MES activities.

Table 8-11: Major defect response package deployment timeline

Response Technique	Days Following Event							Weeks Following Event				
	1	2	3	4	5	6	7	2	3	4	5	6
No. packages – planned MES	1	1	1	1	1	1	1	1	1	0	0	0
Does CAPL have the required capability?	Y	Y	Y	Y	Y	Y	Y	Y	Y			
No. packages – planned SPD	8	8	0	0	0	0	0	0	0	0	0	0
Does CAPL have the required capability?	Y	Y										
No. packages – planned SHC	0	10	10	10	10	10	10	10	10	0	0	0
Does CAPL have the required capability?		Y	Y	Y	Y	Y	Y	Y	Y			

8.3.3.3 CAPL planned response vessel collision

In accordance with the Strategic NEBA (Ref. 82), the response strategies proposed to be used for this spill scenario and response package calculations are described below. Offshore CAR would not be effective because of the hydrocarbon properties (Group 2).

Implement MES response

A MES response will commence for a subsea release as soon as the spill is identified. This may range from very simplistic visual observation only, through to more involved monitoring and evaluating tactics. Appendix C of the OPEP (Ref. 102) has documented the arrangements that CAPL have in place to implement all the required MES tactics; therefore, this technique is not discussed further.

Implement SPD response

Deterministic analysis for the largest volume of oil ashore indicates that ~24.4 m^3 may wash ashore within ~3 days after release. The volume of oil ashore was used to support the planned response requirements—the volume of hydrocarbons that would need to be treated by an SPD response is directly correlated to the volume of oil that may wash ashore.

Based on Appendix C of the OPEP (Ref. 102), each protection team is expected to recover 15.6 m^3 of hydrocarbon per day. On the assumption that 24.4 m^3 washes ashore on the third day, CAPL would need up to two SPD packages available on day two to implement the SPD response. Confirmation that CAPL has the arrangements in place to implement the required number of packages is provided in Table 8-12.

Implement SHC response

For a spill event such as this (a non-continuous release), deterministic analysis indicates shoreline accumulation (if it occurs) occurs rapidly. CAPL will implement strategies to protect prioritised values and sensitivities; however, the focus may be on SHC operations if time restricts the ability to conduct SPD activities.

Deterministic analysis for the largest volume of oil ashore indicates that 24.4 m^3 may wash ashore within ~3 days after release; and the maximum length of actionable shoreline oil was predicted to be ~10 km within ~4 days This scenario predicted exposure to the western coastlines of Montebello Island.

The Montebello Islands consists of a series of relatively flat limestone islands and sandy beaches and lagoons, easily accessed by boat (dependent on weather and sea conditions). On this basis, response planning indicates it would be feasible to conduct SHC activities.

Based on Appendix C of the OPEP (Ref. 102), each SHC team is expected to recover 1.6 m^3 of hydrocarbon per day. If 5 clean-up teams are mobilised on day 3 and used each day, all hydrocarbons can be recovered 5 days from the start of the spill (3 days of SHC response). If required, these efforts could be ramped up as directed and informed by MES activities.

Table 8-12: Vessel collision response package deployment timeline

Response technique	Days following event							Weeks following event				
	1	2	3	4	5	6	7	2	3	4	5	6
No. packages – planned MES	1	1	1	1	1	1	1	1	0	0	0	0
Does CAPL have the required capability?	Y	Y	Y	Y	Y	Y	Y	Y				
No. packages – planned SPD	0	2	2	0	0	0	0	0	0	0	0	0
Does CAPL have the required capability?		Y	Y									
No. packages – planned SHC	0	0	5	5	5	0	0	0	0	0	0	0
Does CAPL have the required capability?			Y	Y	Y							

8.3.4 Spill response environmental risk assessment

8.3.4.1 Ground disturbance—shoreline spill response

Conducting SPD or SHC involves moving personnel and equipment, which triggers the environmental aspect of ground disturbance.

SPD aims to decrease the overall effect of oil on shorelines before they are impacted and uses booms and sorbents placed adjacent to sensitive shoreline habitats to deflect or capture surface oil.

The objective of SHC is to apply techniques that are appropriate to the shoreline type to remove as much oil as possible. Various techniques may be used alone or in combination to clean oiled shorelines, including shoreline assessment, natural recovery, sorbents, sediment reworking, manual and mechanical removal, and washing, flooding, and flushing.

Source

In the event of a worst-case spill event (major defect event releasing Wheatstone trunkline condensate, or vessel collision event releasing MDO), implementing SPD and SHC techniques involves people and equipment, which may disturb shoreline habitat.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Conducting SPD and SHC, including moving personnel and equipment, has the potential to damage terrestrial habitats (including nests), with subsequent impacts to fauna such as turtles and birds.	5

Consequence evaluation

Potential impacts of SPD and SHC vary, depending on the method used and the shoreline habitat. General impacts include physical disturbance from using personnel, vehicles, and equipment.

Particular values and sensitivities in the area that may be affected by the spill include sensitive shoreline habitats (such as mangroves) and nesting / foraging habitat for fauna species such as turtles and birds.

The impacts associated with undertaking SHC may be more than if the hydrocarbon product was left in place and remediated through natural processes. Leaving the product in place is a common response option if continual human and vessel/vehicle traffic has the potential to generate greater impacts than the product itself. This technique has been implemented internationally, including for the Montara spill (where persistent components of the product were left to naturally break down in dense coastal mangroves) and the Macondo spill (where marshes and wetlands that had been impacted by weathered product were allowed to recover naturally). If a smaller extent of shoreline is impacted, the impacts from an SHC response activity may be lessened and more localised.

Potential impacts associated with using vehicles, personnel, and equipment during SHC (and/or SPD) can include disturbing wildlife feeding or breeding (including damage to nests) and damaging dune structures, vegetation, or intertidal habitats. These shoreline activities have the potential to result in short-term and localised damage to or alteration of habitats and ecological communities and therefore the consequence is ranked as Minor (5).

ALARP decision context justification

The risks associated with shoreline oil spill response techniques are well understood, with the techniques having been applied successfully for a number of large spill events. Although there is a good understanding of these response techniques, there is uncertainty regarding the specific location at which this may be undertaken, and the level of response that may be required in these areas. Spill modelling was used to inform the extent of such a spill, and thus provide a sound basis for response planning (including shoreline response) to such an incident.

Control measures to manage the risks associated with shoreline spill response techniques are well defined with most being linked to detailed monitoring plans that feed into tactical planning requirements and NEBAs. During stakeholder consultation, no objections or claims were raised regarding spill response activities. The risks arising from implementing shoreline response techniques in the event of a spill are extremely low, and CAPL consider these to be lower-order risks in accordance with Table 5-3. As such, CAPL considers ALARP Decision Context A should be applied for this aspect.	
Good practice control measures and source	
Control measure	**Source**
OSMP	The OSMP details the arrangements and capability in place for operational and scientific monitoring. Operational monitoring collects information about the oil spill to aid planning and decision making for executing spill response or clean-up operations. Scientific monitoring focuses on the environmental impact attributable to the spill or the associated response activities and informs requirements for remediation (if required). CAPL has developed an NOPSEMA-accepted OSMP (Ref. 101) to support all spill monitoring activities across all its assets. Specifically, Operational Study 6 – Rapid Seabird and Shorebird Assessment and Operational Study 7 – Rapid Marine Megafauna Assessment provide information on the presence of wildlife with regards to predicted trajectory to understand the level of oiled wildlife response (OWR) required.
OPEP	Under the OPGGS(E)R, NOPSEMA require that the petroleum activity have an accepted OPEP in place before commencing the activity. Should a loss of well control (LOWC) scenario occurs, the OPEP will be implemented. CAPL has developed a NOPSEMA-accepted OPEP (Ref. 102) to support all spill response activities across all its assets. The OPEP identifies the resource capability required to implement the strategy based on shoreline sensitivities and the magnitude of the spill.
Likelihood and risk level summary	
Likelihood	Depending on the clean-up technique and habitat, potential consequences of shoreline cleaning are remote (Note: Mechanical methods are generally expected to have greater consequences than manual cleaning). With the control measures in place, CAPL assessed the likelihood of the consequence described above as Remote (5).
Risk level	Very low (9)
Acceptability summary	
Principles of ESD	The potential impact associated with this aspect is considered to have the potential to result in minor, localised, incidental damage to, or alteration of, habitats and ecological communities; however, this is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no additional evaluation against the Principles of ESD is required.
Relevant environmental legislation and other requirements	No legislation and other requirements relevant to this aspect were identified.
Internal context	This CAPL environmental performance standard / procedure was considered relevant for this aspect: • OSMP (Ref. 101).

<table>
<tr><td>External context</td><td colspan="2">No objections or claims were raised regarding spill response activities.</td></tr>
<tr><td>Defined acceptable level</td><td colspan="2">These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.</td></tr>
<tr><th>Environmental performance outcome</th><th>Performance standard / Control measure</th><th>Measurement criteria</th></tr>
<tr><td rowspan="8">Reduce the risk of impacts to the environment during event response</td><td rowspan="7">OSMP
In the event of a Level 2 (or above) oil spill occurring to marine or coastal waters, the OSMP will be activated, and:
• operational and scientific monitoring program are initiated once the specific initiation criteria are met
• operational and scientific monitoring program are implemented within the timeframes outlined in the OSMP
• operational and scientific monitoring components are continued until respective termination criteria are met</td><td>Records confirm the OSMP has been activated</td></tr>
<tr><td>Records confirm that once initial criteria have been met, operational and scientific monitoring programs were initiated.</td></tr>
<tr><td>Records confirm that operational and scientific monitoring programs were implemented within the timeframes outlined in the OSMP.</td></tr>
<tr><td>If any OSMP programs requiring vessels are activated, records demonstrate that CAPL EMT identified vessel availability through existing contracts within 12 hours of OMSP component initiation activation</td></tr>
<tr><td>If any OSMP programs requiring aircraft are activated, records demonstrate that CAPL EMT identified aircraft availability through existing contracts within 12 hours of OMSP component initiation activation</td></tr>
<tr><td>Records show CAPL EMT mobilised a minimum of one identified, contracted vessel within 24 hours to Onslow, Dampier or Barrow Island (subject to Barrow Island quarantine requirements)</td></tr>
<tr><td>Records confirm that once termination criteria have been met, operational and scientific monitoring programs were ceased.</td></tr>
<tr><td colspan="2">OPEP
Refer to the ABU Consolidated OPEP for environmental performance outcomes, standards and measurement criteria related to emergency management, emergency preparedness, and each response tactic</td></tr>
</table>

8.3.4.2 Physical presence—oiled wildlife response

Oiled wildlife response (OWR) activities are aimed at treating fauna that have encountered, or are likely to encounter, spilt hydrocarbons. OWR generates the environmental aspect of physical presence/interaction with fauna, through handling, treating, rehabilitating, and releasing fauna.

Source

In the event of a worst-case spill event (major defect event releasing Wheatstone trunkline condensate, or vessel collision event releasing MDO), the handling and treating marine fauna (through an OWR) will result in personnel interacting with marine fauna.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	Conducting OWR has the potential to cause further harm to oiled fauna due to hazing, barriers, deterrents, and cleaning activities, and has the potential to cause injury/death.	5

Consequence evaluation

Particular environmental values that may be affected by OWR activities include marine fauna such as turtles and birds.

Due to the intensive nature of OWR activities and the fragile nature of many shore and wading birds, OWR activities can have high bird mortality rates. Physical exclusion and hazing operations can result in entanglement and stress-related impacts to marine birds. Cleaning of oiled wildlife may result in skin irritations, impacts to the hydrophobic properties of bird plumage, and stress-induced physiological effects.

Spill modelling indicates that areas along the coast frequented by fauna, such as the Montebello Islands, are areas where OWR is most likely to be undertaken. If a spill coincided with turtle nesting/hatchling or bird nesting periods, a large number of animals may be treated using OWR. Impacts from hazing and deterrents are anticipated to be localised to the area of potential spill impact and limited to the spill period. Even if OWR was undertaken during nesting periods, only a small proportion of the nesting population would be involved as the species potentially involved nest widely elsewhere. The potential consequences associated with an OWR are localised and short term and are ranked as Minor (5).

ALARP decision context justification

The risks associated with OWR are well understood, with the technique having been applied successfully for a number of large spill events. Although there is a good understanding of the response technique, there is uncertainty regarding the specific location at which this may be undertaken, the number of animals that may be impacted, and thus the level of response that may be required.

Spill modelling was used to inform the extent of such a spill, and thus provide a sound basis for response planning to such an incident.

Control measures to manage the risks associated with OWR are well defined with most being linked to detailed monitoring plans that feed into tactical planning requirements and NEBAs.

During stakeholder consultation, no objections or claims were raised regarding OWR activities.

The risks arising from implementing OWR in the event of a spill are extremely low, and CAPL consider these to be lower-order risks in accordance with Table 5-3. As such, CAPL considers ALARP Decision Context A should be applied for this aspect.

Good practice control measures and source

Control measure	Source
OSMP	The OSMP details the arrangements and capability in place for operational and scientific monitoring. Operational monitoring collects information about the oil spill to aid planning and decision making for executing spill response or clean-up operations. Scientific monitoring focuses on the environmental impact

	attributable to the spill or the associated response activities and informs requirements for remediation (if required). CAPL has developed an NOPSEMA-accepted OSMP (Ref. 101) to support all spill monitoring activities across all its assets. Specifically, Operational Study 6 – Rapid Seabird and Shorebird Assessment and Operational Study 7 – Rapid Marine Megafauna Assessment provide information on the presence of wildlife with regards to predicted trajectory to understand the level of OWR required.	
OPEP	Under the OPGGS(E)R, NOPSEMA require that the petroleum activity have an accepted OPEP in place before commencing the activity. Should a LOWC scenario occurs, the OPEP will be implemented. CAPL has developed a NOPSEMA-accepted OPEP (Ref. 102) to support all spill response activities across all its assets. The OPEP identifies the resource capability required to implement the strategy based on shoreline sensitivities and the magnitude of the spill.	
Likelihood and risk level summary		
Likelihood	Where there is the possibility for surface oil to impact wildlife, the risks associated with OWR are lower than those associated with inaction. With the control measures in place, the likelihood of the described consequences occurring from OWR activities was determined to be Remote (5).	
Risk level	Very low (9)	
Acceptability summary		
Principles of ESD	The potential impact associated with this aspect is considered as having the potential to result in a localised incidental impact and thus is not expected to affect biological diversity and ecological integrity. The consequence associated with this aspect is Minor (5). Therefore, no additional evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	No legislation and other requirements considered relevant to this aspect were identified.	
Internal context	The CAPL environmental performance standard / procedure considered relevant for this aspect is: • OSMP (Ref. 101).	
External context	No objections or claims were raised regarding spill response activities.	
Defined acceptable level	These impacts and risks are inherently acceptable as they are considered lower-order impacts in accordance with Table 5-3. In addition, the potential impacts and risks evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcome	**Performance standard / Control measure**	**Measurement criteria**
Reduce the risk of impacts to the environment during event response	**OSMP** In the event of a Level 2 (or above) oil spill occurring to marine or coastal waters, the OSMP will be activated, and: • operational and scientific monitoring program are	Records confirm the OSMP has been activated
		Records confirm that once initial criteria have been met, operational and scientific monitoring programs were initiated.
		Records confirm that operational and scientific monitoring programs were

	initiated once the specific initiation criteria are met • operational and scientific monitoring program are implemented within the timeframes outlined in the OSMP • operational and scientific monitoring components are continued until respective termination criteria are met	implemented within the timeframes outlined in the OSMP.
		If any OSMP programs requiring vessels are activated, records demonstrate that CAPL EMT identified vessel availability through existing contracts within 12 hours of OMSP component initiation activation
		If any OSMP programs requiring aircraft are activated, records demonstrate that CAPL EMT identified aircraft availability through existing contracts within 12 hours of OMSP component initiation activation
		Records show CAPL EMT mobilised a minimum of one identified, contracted vessel within 24 hours to Onslow, Dampier or Barrow Island (subject to Barrow Island quarantine requirements)
		Records confirm that once termination criteria have been met, operational and scientific monitoring programs were ceased.
	OPEP Refer to the ABU Consolidated OPEP for environmental performance outcomes, standards and measurement criteria related to emergency management, emergency preparedness, and each response tactic	

9 implementation strategy

This section provides a description of the implementation strategy as required under regulation 22 of the OPGGS(E)R. The implementation strategy identifies the systems, practices, and procedures used to ensure the environmental impacts and risks of the petroleum activities are continuously reduced to ALARP and the environmental performance outcomes and standards detailed in Sections 7 and 8 are achieved.

9.1 Operational Excellence Management System

CAPL's operations are managed in accordance with Chevron Corporation's OEMS, which is a comprehensive management framework that supports the corporate commitment to protect the safety and health of people and the environment. The OEMS aligns with ISO 14001:2015 *Environmental management systems - Requirements with guidance for use* (Ref. 437) and meets the requirements of the OPGGS(E)R.

OE systematically manages workforce safety and health, process safety, reliability, and integrity, environment, efficiency, security, and stakeholders to meet the OE objectives and ensure safe operations of CAPL facilities and projects. The OEMS comprises the following key components (Figure 9-1):

- **leadership and OE culture**—through the OEMS, CAPL leaders engage employees and contractors to build and sustain the OE culture and deliver OE performance
- **management system cycle** (MSC)—by applying the MSC, CAPL leaders make risk-based and data-driven decisions, prioritise activities, and direct improvements
- **focus areas and OE expectations** (including common expectations)—focus areas are categories of OE risks and include workforce safety and health, process safety reliability and integrity, environment, efficiency, security, and stakeholder engagement; OE expectations guide the design, management, and assurance of the presence and effectiveness of safeguards.

The OEMS outlines the process for identifying, establishing, and maintaining safeguards and to provide assurance that they are in place, functioning as intended, and are in accordance with legal and OE requirements. The risk management process (Figure 9-1) assesses and identifies safeguards, which are the hardware and human actions designed to directly prevent or mitigate an incident or impact associated with the project, personnel, and the environment. The assurance process (Figure 9-1) provides the verification and validation that the safeguards are in place and functioning as intended.

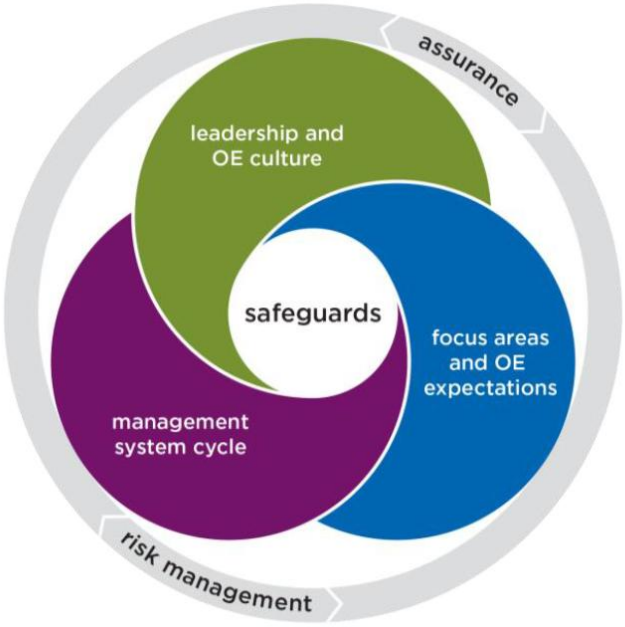


Figure 9-1: Overview of Chevron Corporation's OEMS

9.2 Leadership and OE culture

CAPL leaders demonstrate and are accountable for the consistent and rigorous application of the OEMS to drive performance and manage risks. The actions and visibility of leaders reinforce CAPL's commitment to place the highest priority on the safety and health of its workforce, and on the protection of communities, the environment, and its assets.

9.2.1 Roles and accountability

CAPL leaders have the overall accountability for the implementation of the OEMS.

9.2.1.1 Chain of command (petroleum activity)

A chain of command for implementing the petroleum activity is outlined in Figure 9-2.

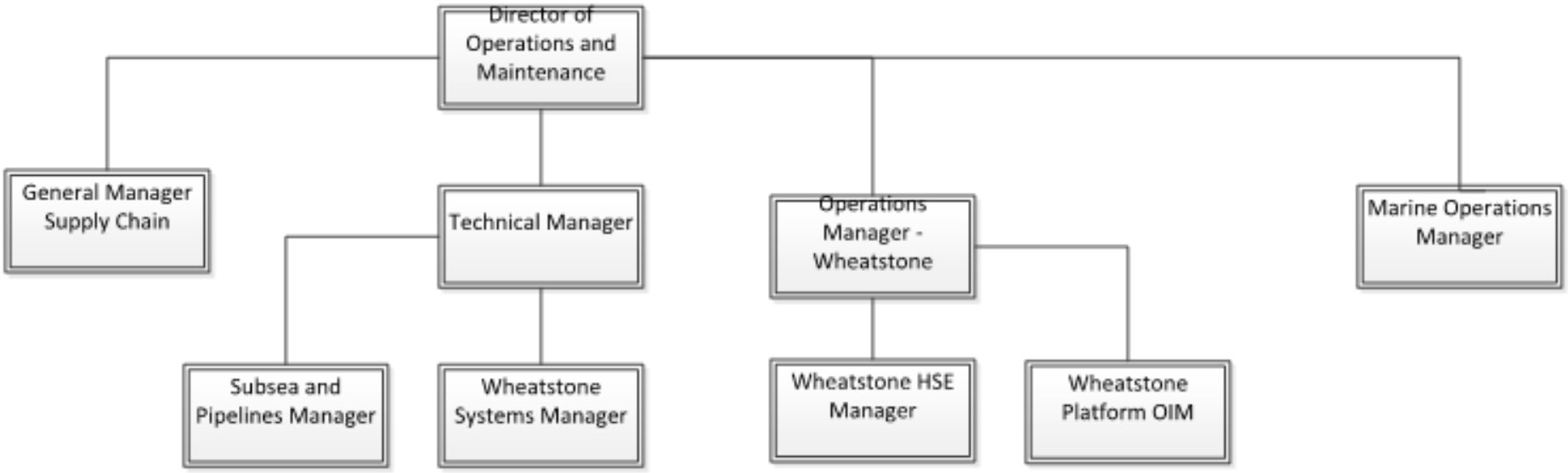


Figure 9-2: Chain of command—petroleum activities

9.2.1.2 Roles and responsibilities (petroleum activity)

The roles and responsibilities of key CAPL and contractor personnel for implementing task-specific control measures are detailed in Sections 7 and 8, and are summarised in Table 9-1.

Table 9-1: Key roles and responsibilities—petroleum activities

Role	Responsibilities
CAPL personnel	
Operations Manager - Wheatstone	• Overall responsibility for implementing, managing, and reviewing this EP
Wheatstone Platform Offshore Installation Manager (OIM) Wheatstone HSE Manager	Ensure that: • all personnel are made aware of their requirements under this EP • all personnel have the relevant training and competency as described in Section 9.2.1.3 • impacts and risks are continually reduced to ALARP by implementing this EP in accordance with Sections 7 and 8 • monitoring and reporting is undertaken in accordance with Section 9.4 • all changes to this EP are subject to a Management of Change assessment as described in Section 9.3.2.2 • compliance with this EP is verified in accordance with Section 9.3.6 • this EP is reviewed in accordance with Section 7.
Subsea and Pipelines Manager	• Ensure that inspection and monitoring of the hydrocarbon system is undertaken in accordance with the IM Plans (Ref. 493; Ref. 103).
General Manager Supply Chain	• Ensure that all third-party vessels or contractors are aware of any requirements within this EP.
Contractor personnel	
Vessel Master	Ensure that: • impacts and risks are continually reduced to ALARP by implementing this EP in accordance with Sections 7 and 8 • all incidents are reported to CAPL • all emissions and discharges are monitored and recorded in accordance with Sections 7 and 8.
Vessel crew	Ensure that: • the activity is undertaken in a professional and safe manner with attention to good housekeeping procedures and work practices • immediately report any incidents to the Vessel Master • immediately report any environmental incidents or spills to the Vessel Master • bridge-watch crew are to record marine fauna observations in accordance with Section 6.1.
Aviation operators	Ensure that: • Aircraft implement cetacean interaction requirements in accordance with EPBC Regulations 2000
ROV / AUV operator	Ensure that: • UCH finds protocol is implemented.

9.2.1.3 Training and competency (petroleum activity)

In accordance with Regulation 22(4) of the OPGGS(E)R and Regulation 15(5) of the PP(E)R, each employee responsible for implementing task-specific control measures during operational activities must be aware of their specific responsibilities as detailed in this EP. People who hold responsibilities relating to implementing this EP are hired by CAPL on the basis of their particular qualifications, experience, and competency.

All external contractor personnel involved with activities within scope of this EP will hold qualifications or training certification relevant to their role, which will be confirmed through the contractor selection process, audits and review processes.

Personnel with specific responsibilities under this EP (refer to Section 9.2.1.2) were included during the internal review of this EP and are made aware of their role-specific responsibilities under this EP.

All personnel (including contractors) are required to attend inductions and/or training that are relevant to their role (Table 9-2).

Table 9-2: Training and competency—petroleum activities

Type	Required personnel	Scope
Induction	All relevant personnel	Before commencing operations, all personnel, including subcontractors, must attend an induction that includes an overview of the requirements of this EP. This induction fosters environmental stewardship amongst all personnel and ensures that they are aware of the control measures implemented to minimise the potential impact on the environment. The induction includes: • awareness of Chevron Corporation's Operational Excellence Policy 530 (appendix a) • an overview of environmental sensitivities, and key impacts and risks from the petroleum activity • cetacean interaction requirements under Part 8 of the EPBC Regulations 2000 • fauna interaction requirements under Biodiversity Conservation Regulations 2018 • good waste management and hazardous materials housekeeping requirements • incident reporting requirements • incident response arrangements.
PW laboratory sampling training	All laboratory personnel	Laboratory personnel taking samples and analysing samples will be competent in ABU – 1645 Produced Water Treatment System – Fundamental Review and CAPL Laboratory Manual standards.
Marine Standard	All vessel personnel	Vessel personnel meet minimum Chevron Marine Standard competency requirements.
Platform operations	All relevant platform personnel	Competency requirements for the following operational roles as described in the Competency Management System (CMS): • Platform crane operators • CRT • Seawater system operators • Drainage system operators • Platform flare system operators

Type	Required personnel	Scope
		• Platform turbine operators • Platform compressor operators

9.3 Focus areas and OE expectations

The OE expectations are organised into six focus areas (Figure 9-3). The OE expectations provide guidance to design, operate, maintain, improve, and assure the presence and effectiveness of safeguards. Common expectations also apply and support the OE expectations and focus areas.

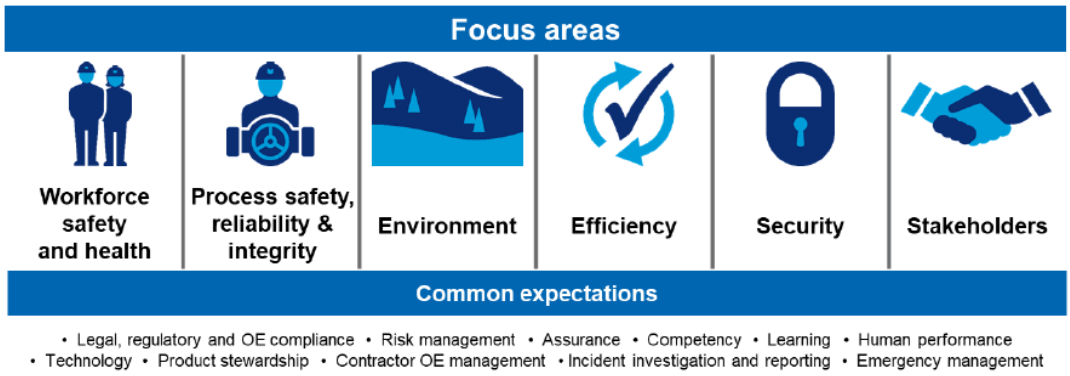


Figure 9-3: Focus areas and common expectations

The focus areas and common expectations relevant to this EP, and their key processes that demonstrate how CAPL is effective in reducing environmental impacts and risks to ALARP and an acceptable level, are listed in Table 9-3. Each of these focus areas and common expectations are described in further detail in the following subsections.

Table 9-3: Relevant focus areas and common expectations

Focus area or common expectation	Key processes
Focus area	
Workplace safety and health	• ABU Operations Process: Control of Work Manual (Ref. 53) • Chevron Marine Standard Non Tankers: Corporate OE Standard (Ref. 100) • ABU Hazardous Materials Management Procedure (Ref. 76)
Process safety, reliability and integrity	• OE Information Management: ABU Standardised OE Process (Ref. 68) • Management of Change for Facilities and Operations: ABU Standardised OE Process (Ref. 62) • ABU Surface Equipment Reliability and Integrity Process (SERIP) Base Business: Standardised OE Process (Ref. 63)
Environment	• Environmental Stewardship: ABU Standardised OE Process (Ref. 64) • Quarantine Procedure Marine Vessels. ABU Standardised OE Process (Ref. 81)

Stakeholders	• Stakeholder Engagement and Issues Management: ABU Standardised OE Process (Ref. 75)
Common expectation	
Risk management	• *ABU OE Risk Management Process* (Ref. 78)
Assurance	• *OE Assurance Corporate Process* (Ref. 70) • OE Corporate Standard Incident Investigation (Ref. 79) • OE Data Reporting Standard (Ref. 89)
Incident investigation and reporting	• Incident Investigation and Reporting (II&R) Execution Manual (Ref. 87)
Emergency management	• *Emergency Management OE Process* (Ref. 71) • OPEP (Ref. 102) • *Operational and Scientific Monitoring Plan* (OSMP) (Ref. 101)

9.3.1 Workforce safety and health

9.3.1.1 Managing safe work

The CoW expectation is to assess workplace safety and health hazards and manage the risks associated with the execution and control of work performed by CAPL employees and their business partners. The CoW process (Ref. 52) ensures activities are assessed and executed in a safe and consistent manner.

Standards and procedures relating to CoW relevant to this EP include the Work Authorisation (formerly permit to work system). The Work Authorisation system, which includes SIMOPS and hazard analysis, is a way to identify, communicate, mitigate, and control hazards associated with work that have the potential to adversely affect health, safety, and environment (HSE). As the potential consequence associated with each task increases, so does the level of controls and approval that are required.

9.3.1.2 Marine

The *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 100) identifies the requirements and activities necessary to deliver safe, reliable, and efficient third-party marine operations. This standard describes key roles and responsibilities for managing marine safety and establishes measurement and verification activities designed to promote a process of continual improvement.

The standard applies to all marine vessels, emergency response, and all other (non-bulk petroleum) vessels chartered, owned, or operated by CAPL. The process also applies to vessels contracted by an affiliate or contractor that provide marine support or marine services to CAPL.

The key elements of the standard that apply to the activities outlined in this EP are:

- vessel inspections—vessels used by CAPL or its affiliates must undergo a vessel audit/inspection process before deployment to ensure that the vessels and the staffing levels meet safety requirements and are fit-for-purpose; inspections also ensure emergency procedures (such as SOPEP/SMPEP) are available and that the required standards are met for navigation equipment, lighting, waste systems, and other marine safety protocols including Marine Order 30 (Prevention of Collisions)

- competency management—vessels used by CAPL must be operated by competent personnel who meet applicable international and local regulations
- cargo handling—cargo transport and handling operations on marine vessels must comply with handling procedures and align to standard marine industry practices
- complicated and/or heavy lifts—all lifting and installing of heavy equipment near offshore infrastructure must meet the detailed requirements
- hose management—operations involving the transfer of bulk liquids using loading hoses must align to standard industry practice and safety of the environment
- vessel communication—vessels must have in place communications procedures for operations close to installations, or other mobile units to ensure that safe positioning and communications are maintained at all times.

Vessels provide an activity-specific operational guideline (ASOG), based on their use and specification, which must be accepted by CAPL.

9.3.1.3 Hazardous materials

CAPL's *Hazardous Materials Management Procedure* (Ref. 76) outlines the process for HSE assessment and approval of hazardous materials. Hazardous materials include those classified as 'hazardous substances or 'dangerous goods'.

The Hazardous Materials Management Procedure is designed to:

- assess hazardous materials requested for procurement for their HSE risks
- ensure that appropriate controls are identified for using procured hazardous materials and that these controls are communicated to the requestors of the materials and end users at locations within CAPL's operations
- ensure no product includes CAPL-prohibited ingredients
- ensure substitutes were considered if a product contains CAPL-restricted ingredients.

As part of the hazardous materials selection process, hazardous materials that will be discharged to the environment will undergo a detailed environmental assessment. This environmental assessment is guided by the methodology and classification system used by the Offshore Chemical Notification Scheme (OCNS) and Chemical Hazard Assessment and Risk Management (CHARM). Hazardous materials not listed on OCNS or CHARM, are still subject to the environmental assessment described below.

The environmental assessment includes an evaluation of the potential environmental risks that could be associated with the chemical, and considers the relevant dosage, quantity and frequency of the chemical discharge, the location and nature of the receiving environment, and the assessment criteria described in Table 9-4.

The chemical selection process ensures impacts and risks associated with chemical discharge are reduced to levels that are ALARP and acceptable, while meeting operational performance requirements.

Table 9-4: Chemical risk assessment criteria

Assessment criteria	Selection rationale
Potential for acute and/or chronic toxicity to aquatic life	The toxicity of a chemical is the fundamental consideration within this assessment. This reflects the UK OCNS system which ranks chemicals based on their toxicity, and then adjusts rankings depending on biodegradation and bioaccumulation properties. The scale for toxicity is based on the toxicity rating classification system used by DMPE, from Hinwood et al. (Ref. 267).
Persistence or biodegradability	Biodegradation rate provides an indication of the potential persistence of the chemical within the environment, and therefore the potential duration of exposure for environmental sensitivities. The scale for biodegradation is based on adjustment criteria used by Centre for Environment, Fisheries and Aquaculture Science (CEFAS) to finalise chemical hazard assessment scores under the OCNS system.
Bioaccumulation or bio-concentration	Indicates the potential for the chemical (or components of the chemical) to accumulate within biological matrices and food chains. Chemicals which may not be toxic and are introduced to the environment in low concentrations can concentrate within biological matrices to the point where they become toxic and may have either acute or chronic effects. The scale for bioaccumulation is based on adjustment criteria used by CEFAS to finalise chemical hazard assessment scores under the OCNS system.

9.3.2 Process safety, reliability and integrity

9.3.2.1 OE information management

Under the OEMS, records (including compliance records to demonstrate environmental performance and compliance with commitments in this EP) will be retained in accordance with Regulation 27 of the OPGGS(E)R and Regulation 31 of the PP(E)R.

The OE information management process (Ref. 68) explains how critical information related to HSE, reliability, efficiency, and process safety is to be identified, developed, assessed, and maintained so that the workforce has access to, and is using, the most current information. This document describes key roles, responsibilities, and competencies associated with the process, and includes measurement and verification activities.

Vessel contractors will maintain records as above and are required to make these available upon request.

9.3.2.2 Management of change

Management of Change (MoC) expectations are to manage proposed changes to design, equipment, operations and products before they are implemented. In conjunction with the *ABU OE Risk Management Process* (Section 9.3.5), the *Management of Change for Facilities and Operations* process (Ref. 62) is followed to document and assess the impact of changes to activities described in this EP. These changes will be addressed to determine if there is potential for any new or increased environmental impact or risk not already provided for in this EP. If these changes do not trigger relevant petroleum regulations, as detailed below, this EP will be revised, and changes recorded in the EP without resubmission.

In accordance with Regulation 17 of the OPGGS(E)R, and Regulation 18 of the PP(E)R, this EP must be resubmitted to NOPSEMA or DMPE under the relevant jurisdiction in the following circumstances:

- before commencing a new activity, or any significantly modification or new stage of the activity, not provided for in this EP
- if a change in the titleholder results in a change in the manner in which the impacts and risks of the activity are managed
- as soon as practicable after the occurrence of any significant new environmental impact or risk, or significant increase in an existing environmental impact or risk, that is not provided for in this EP
- as soon as practicable after the occurrence of a series of new environmental impacts or risks, or a series of increases in existing environmental impacts or risks, occur which, taken together, amount to the occurrence of a significant new environmental impact or risk, or a significant increase in an existing environmental impact or risk, not provided for in this EP.

9.3.2.3 Computerised maintenance management system

The computerised maintenance management system (CMMS) supports asset integrity management and reliability management through a rigorous, detailed register of inspection and maintenance tasks and data records, including maintenance planning and scheduling. Each item (down to component level) is assessed, has a criticality assigned based on importance, performance standards (including those based on manufacturers' specifications or similar), and a start date and frequency for inspections and maintenance. Items of high criticality are to be completed on time, or adequately managed under the deviation process.

9.3.2.4 Laboratory information management system

The laboratory information management system (LIMS) provides for the planning, collection, analysis, recording, and reporting of platform samples to ensure product quality, plant reliability, and to support real-time monitoring. Requirements and schedules are developed within the LIMS, and non-compliance alerts are reported internally. Generally, the platform PW laboratory results and other relevant water sampling results are managed through the LIMS.

9.3.2.5 Production information management system

The production information management system (PIMS) accurately records information relating to production, metering, discharges, and hydrocarbon processing on the platform.

9.3.2.6 Competency Management System

All operations personnel have a competency profile allocated to their position that details training and competence requirements to undertake their duties. CAPL uses a competency management system (CMS) to track and manage competencies and required training for the operations workforce to ensure minimum levels are met and that personnel are trained and competent to undertake their duties.

9.3.2.7 Produced water operating manual

As mentioned in the platform PW risk assessment (Section 7.2.6), a documented response procedure is to be implemented if PW TPH concentrations trend off-

specification. This topsides response is described in the platform *Produced Water Treatment System Operating Manual* (Ref. 111) and *Produced Water High Oil in Water Content Procedure* (Ref. 110), and operators follow a tiered response that aims to keep the PW TPH results below 30 mg/L as far as practicable.

9.3.2.8 Emergency operating procedures

Emergency operating procedures (EOPs) provide clear instructions on how operations personnel should respond to emergency scenarios. EOPs provide guidelines for safe hazard mitigation in the event of an emergency and include instructions on critical steps required to safely secure a process unit during specific emergency situations. EOPs provide guidance to platform CCR personnel to detect, isolate, and stabilise non-routine events including platform and hydrocarbon system LOC events (Ref. 118).

9.3.3 Environment

9.3.3.1 Environmental stewardship

The environmental stewardship process (Ref. 64) is designed to identify, assess, and manage potentially significant environmental impacts in a consistent manner and continually improve environmental performance. The objectives of the process are to:

- provide a consistent approach to environmental stewardship
- reduce the potential for environmental impacts
- support continual improvement in environmental performance throughout the lifecycle of Chevron's assets.

9.3.3.2 Quarantine

The *Quarantine Procedure Marine Vessels* (Ref. 81) provides information about quarantine compliance to CAPL, contractors, and others associated with marine vessels.

The purpose of this procedure in relation to the offshore title areas is to prevent offshore facilities and activities associated with CAPL title areas becoming staging areas for the introduction of marine pests into Australian waters and ports.

This procedure also outlines the requirements for vessels operating in title areas and details the premobilisation requirements and ongoing management of vessels operating in title areas.

9.3.4 Stakeholders

Stakeholder engagement expectations are to manage social, political, and reputational risks to CAPL (and Chevron), address potential business impacts, and generate business value by:

- identifying, assessing, and prioritising issues
- building and maintaining relationships with external stakeholders, including governments and the communities where CAPL operates
- developing and executing issue management and stakeholder engagement plans, tracking engagements and issues, and validating the effectiveness of plans.

The *Stakeholder Engagement and Issues Management Process* (Ref. 75) details an integrated approach for engaging stakeholders and managing external stakeholder issues. This process describes key roles and responsibilities for stakeholder engagement, establishes measurement and verification activities designed to monitor the effectiveness of the stakeholder engagement process and to promote continual improvement.

9.3.4.1 Ongoing Consultation with Relevant Persons

In accordance with regulation 22(15) of the OPGGS(E)R, CAPL will undertake ongoing consultation for this petroleum activity with relevant authorities and other relevant interested persons or organisations for this petroleum activity as described in Table 9-5.

Through co-design of consultation, CAPL will agree processes for ongoing consultation with relevant persons. This may include consultation on the ongoing environmental performance of the petroleum activity and review of applicable control measures with the relevant persons. Engagement agreements and consultation plans with relevant persons are included in the sensitive information report. Records for ongoing consultation with relevant persons will be recorded and maintained in CAPLs online tracking engagements system.

Any objections or claims arising from ongoing consultation that have merit and have the potential to result in changes to the description of environment, impact or risk assessment, or control measures, will be subject to CAPL's Management of Change (MoC) process, in accordance with Section 9.3.2.2.

If a new relevant person is identified during the in-force period of the EP, CAPL will provide sufficient information to that relevant person (as described in Section 6.2.4) and will assess the merits of the objections or claims of that relevant person in accordance with Section 6.3.7 and CAPL's MoC process (Section 9.3.2.2).

Table 9-5: Notifications and Ongoing Consultation

Relevant person	Notification or ongoing consultation requirement	Timing	Frequency
Notifications			
AHO	Provide information to enable promulgation of Notice to Mariners if there needs to be dissemination of information important to safe navigation e.g. where an IMR activity involves extended periods of work on subsea infrastructure and will require other vessels in the area to take steps to avoid the area. Notify AHO via datacentre@hydro.gov.au	At least four weeks before commencing activities, or as otherwise agreed with AHO.	Once, prior to activities commencing.
AMSA	Provide information to enable promulgation of radionavigation warnings if there needs to be dissemination of information important to safe navigation e.g. where an IMR activity involves	At least 24 to 48 hours before commencing activities, or as otherwise agreed with AMSA.	Once, prior to activities commencing.

Relevant person	Notification or ongoing consultation requirement	Timing	Frequency
	extended periods of work on subsea infrastructure and will require other vessels in the area to take steps to avoid the area and/or if works are to be undertaken in a major shipping fairway. Notify AMSA's JRCC via rccaus@amsa.gov.au (phone: 1800 641 792 or +61 2 6230 6811).		
Potentially affected relevant persons and/or relevant persons that have requested emergency event notifications, including: • RecFishWest • First Nations people and/or representative bodies	CAPL will provide an incident notification if an unplanned emergency event occurs that is likely to affect the functions, interests, or activities of the identified relevant person.	As soon as practicable within an emergency response.	Once, post unplanned emergency event
Ongoing consultation			
Relevant persons that have requested ongoing notifications including: • WAFIC • RecFishWest • AFMA	Relevant persons will be advised of the commencement of key phases of activities and any relevant PSZ information via biannual project updates for planned activities, or specific notification regarding major repair works	Biannually	Biannually
Potentially affected relevant persons	CAPL to advise of any new or significant changes to activities or impacts/risks within the scope of the EP, following an evaluation as per Section 9.3.2.2, that may potentially impact marine users functions, interests, or activities.	Prior to new or significant changes to activities or impacts/risks occurring	As required
First Nations people and/or representative bodies	CAPL to continue engagement with First Nations people and/or representative bodies regarding identifying and understanding the cultural values or features that may be present within the EMBA (refer to Section 9.3.4.3).	Ongoing	Ongoing
	Any new information on cultural values or features within the EMBA, and subsequent changes to	Ongoing	Ongoing

Relevant person	Notification or ongoing consultation requirement	Timing	Frequency
	activities or impacts/risks within the scope of the EP, will undergo an MoC evaluation as per Section 9.3.2.2.		
	CAPL to advise of any new or significant changes to activities or impacts/risks within the scope of the EP, following an evaluation as per Section 9.3.2.2, that may potentially impact the functions, interests and activities of First Nations people and/or representative bodies.	Prior to new or significant changes to activities or impacts/risks occurring.	As required
	If an unplanned emergency event occurs that is likely to affect the functions, interests, or activities of First Nations people and/or representative bodies, CAPL will commence engagement with the relevant person and/or representative bodies.	As soon as practicable within an emergency response.	Once, post unplanned emergency event
DCCEEW	CAPL to advise of any new or significant changes to activities or impacts/risks within the scope of the EP, following an evaluation as per Section 9.3.2.2, that may potentially impact UCH (as protected by the UCH Act).	Prior to new or significant changes to activities or impacts/risks occurring.	As required

9.3.4.2 Consultation in the event of an emergency

In the event of an emergency hydrocarbon spill event, CAPL will commence oil spill trajectory modelling using the actual inputs associated with the spill event to predict trajectory, as described in the OPEP (Ref. 102).

Once oil spill trajectory modelling is completed, CAPL will start engaging with potentially affected relevant persons (those considered relevant from Table 6-4, and any additional relevant persons identified under Section 9.3.4.1), plus any others identified from the oil spill trajectory modelling). This engagement will include WAFIC and any potentially affected commercial fisheries as required. The process for reaching out to these relevant persons includes direct contact (phone or email) or indirect contact via the CAPL website.

In the event of other emergency events (e.g. potential reportable incident), CAPL will commence any emergency management as required (and in accordance with Section 9.3.8), and consultation with required departments or agencies will occur as per regulatory requirements (e.g. refer to Table 9-18 for incident reporting requirements).

CAPL will also notify any relevant persons (as identified in Table 9-5) that requested to be notified in the event of an oil spill or in the event of any other emergency event.

9.3.4.3 Ongoing engagement with First Nations representative bodies

Through the consultation process in preparation of this EP (Section 6), several potential initiatives or scopes for ongoing engagement with First Nations representative bodies were identified, including consideration of

- ranger programs
- capacity building for emergency response support
- support to assist with identifying and articulating the cultural values and features of Country.

These initiatives/scopes are being discussed and progressed with the respective representative bodies.

Where requested, formal engagement plans and/or consultation protocols are in development and once agreed to by CAPL and the relevant representative body, these will be implemented.

Table 9-6 provides a summary of the objectives, scope, and responsibilities of the engagement plans and/or consultation protocols drafted to date. Further information on ongoing consultation and relationship building with First Nations representative bodies is presented in Table 9-7.

Table 9-6: Summary of objectives, scope, and responsibilities in engagement plans and/or consultation protocols

Relevant person	Notification or ongoing consultation requirement	Timing
• Provide governance and strategic oversight to guide collaboration and communications • Set out general terms for allocation of resources and recovery of reasonable costs • Establish a framework for ongoing consultation • Outline the principles for building relationships: • co-design and co-decide • transparency • walking together.	• Consultation meetings • Consultation funding • Review of information relating to CAPL proposals • Confidentiality • Negotiation principles • Dispute resolution • General correspondence.	• CAPL responsibilities: • design and plan engagements in advance • engage in person and aim to provide information in plain English • provide access to internal subject matter experts as well as support for external and independent advice • meet reasonable costs and expenses • Joint responsibilities: • share plans and strategies with each other • plan and engage early and work together on issues • use the negotiations to build trust and goodwill and to negotiate in good faith • spend time together outside of the boardroom.

Table 9-7: First Nations representative bodies ongoing consultation and relationship building

First Nations representative body	Ongoing Consultation	Relationship Building
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	• CAPL has executed an interim cost recovery agreement with BTAC for ongoing consultation and CAPL and BTAC have finalised a longer-term funding agreement CAPL providing support to BTAC to initiate cultural mapping program.	• CAPL has provided and are implementing an agreed Engagement Plan • Cost recovery mechanisms in place for informal meetings with BTAC including on country meetings and events • CAPL has invited BTAC to an on-country consultation on Barrow Island • CAPL has supported BTAC with an expression of interest to participate in a joint venture with the Pilbara Development Commission on the Northern Native Seed Initiative • CAPL provided opportunity to participate in Chevron Community Spirit Grant program • CAPL has provided support to BTAC to commence the first phase of a cultural mapping program • Invitation to participate in MFO training in September 2024 and 2025 • CAPL provided opportunities for oil spill training in Perth in 2024 and 2025 • Invitation to participate in Gorgon Turtle Monitoring Program on Barrow Island in January 2025 • CAPL provided opportunities to participate in workshops and attend the 25th Biennial Conference on the Biology of Marine Mammals in Perth in November 2024
Mardathoonera Cultural Heritage Pty Ltd (MCH)	• CAPL has provided an engagement plan and consultation protocol which includes cost recovery • CAPL working with MCH to forecast consultation requirements and schedule.	• CAPL has provided an Engagement Plan and Consultation Protocol which provides cost recovery for informal meetings with MCH including on country meetings to learn more about Country and Sea Country • CAPL has provided an on-country consultation at Barrow Island and tour (2 nights) • Invitation to participate in MFO training in September 2024 and 2025 • CAPL provided opportunities for oil spill training in Perth in 2024 and 2025

First Nations representative body	Ongoing Consultation	Relationship Building
		• On-country meetings in 2024 • Invitation to participate in Gorgon Turtle Monitoring Program on Barrow Island in January 2025 • CAPL provided opportunities to participate in workshops and attend the 25th Biennial Conference on the Biology of Marine Mammals in Perth in November 2024.
Nhuwala Claimant Group (NCG)	• CAPL and NCG are developing a consultation protocol which provides cost recovery and agreed meeting schedule.	• Invitation to participate in MFO training and oil spill training in August 2025 • CAPL provided opportunities for oil spill training in Perth • CAPL arranged for NCG to visit to Barrow Island in September 2025 and discuss ongoing consultation
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	• CAPL has completed a workshop with the NTGAC board to design ongoing consultation • CAPL has provided an Engagement Plan to NTGAC which provides cost recovery for informal meetings with NTGAC including on country meetings and events • CAPL working with NTGAC to forecast consultation requirements and schedule.	• CAPL has offered funding support to NTGAC for a resource to assist with consultations and the development of the corporation • CAPL invited NTGAC participants to attend the Roebuck Challenge Oil Spill Response Training in Broome (October 2023) • CAPL provided opportunity to participate in Chevron Community Spirit Grant program • Invitation to participate in MFO training in September 2024 • CAPL provided opportunities for oil spill training in Perth.
Wirrawandi Aboriginal Corporation (WAC)	• CAPL and WAC have established a joint working group for ongoing consultation with cost recovery confirmed • CAPL working with WAC to forecast consultation requirements and schedule.	• CAPL invited WAC participants to attend the Roebuck Challenge Oil Spill Response Training in Broome (October 2023) • CAPL provided WAC Board and Elders opportunity to spend time on Barrow Island in 2023 • CAPL has provided WAC funding support to employ a Ranger Coordinator • CAPL supported WAC with an expression of interest to participate in a joint venture with the Pilbara Development Commission on the Northern Native Seed Initiative • CAPL provided opportunity to participate in Chevron Community Spirit Grant program.

First Nations representative body	Ongoing Consultation	Relationship Building
		• CAPL provided opportunities to participate in workshops and attend the 25th Biennial Conference on the Biology of Marine Mammals in Perth in November 2024. • Invitation to participate in MFO training in September 2024 and 2025 • CAPL provided opportunities for oil spill training in Perth in 2025

9.3.5 Risk management

The risk management process (Ref. 78) assesses and identifies safeguards, which are the hardware and human actions designed to directly prevent or mitigate an incident or event and is designed to be consistent with the environmental risk management requirements of ISO 14001 *Environmental Management System* (Ref. 437) and ISO 31000:2018 *Risk management – Principles and guidelines* (Ref. 438).

This risk management process is summarised in Section 5 of this EP. Additional risk assessments must be undertaken if the MoC process (Section 9.3.2.2) is triggered. Risk assessments are undertaken in accordance with this process.

The *ABU OE Risk Management Process* (Ref. 78) and the *Management of Change for Facilities and Operations* process (Ref. 62) are the key systems CAPL use to ensure, that in accordance with Regulation 14(3)(a) of the OPGGS(E)R and Regulation 15(3)(a) of the PP(E)R, the impacts and risks of the petroleum activity continue to be identified and reduced to ALARP.

9.3.6 Assurance

Within the OEMS, assurance is a common expectation that supports the OE objective of each focus area. The *ABU OE Assurance Process* (Ref. 70) enables CAPL to deliver assurance that safeguards are established and functioning; it details:

- a framework for managing safeguards and verification activities that assure that CAPL complies with applicable legal and OEMS requirements
- a process to identify and resolve potential noncompliance
- the minimum qualifications and organisational capability to execute this process.

The *ABU OE Assurance Plan* (Ref. 77) is a multi-year plan that documents the CAPL ABU integrated assurance system and associated assurance activities (Figure 9-4). The *ABU OE Assurance Plan* is reviewed and approved annually and includes:

- a list of OE assurance priorities based on risk
- a schedule of assurance activities to evaluate safeguards and verifications (e.g. safeguard assurance workshops, audits, and assurance programs)
- reference to asset assurance plans that outline asset specific assurance activities and risk-based frequency (i.e. field inspection programs, audits, compliance reviews, performance reviews).

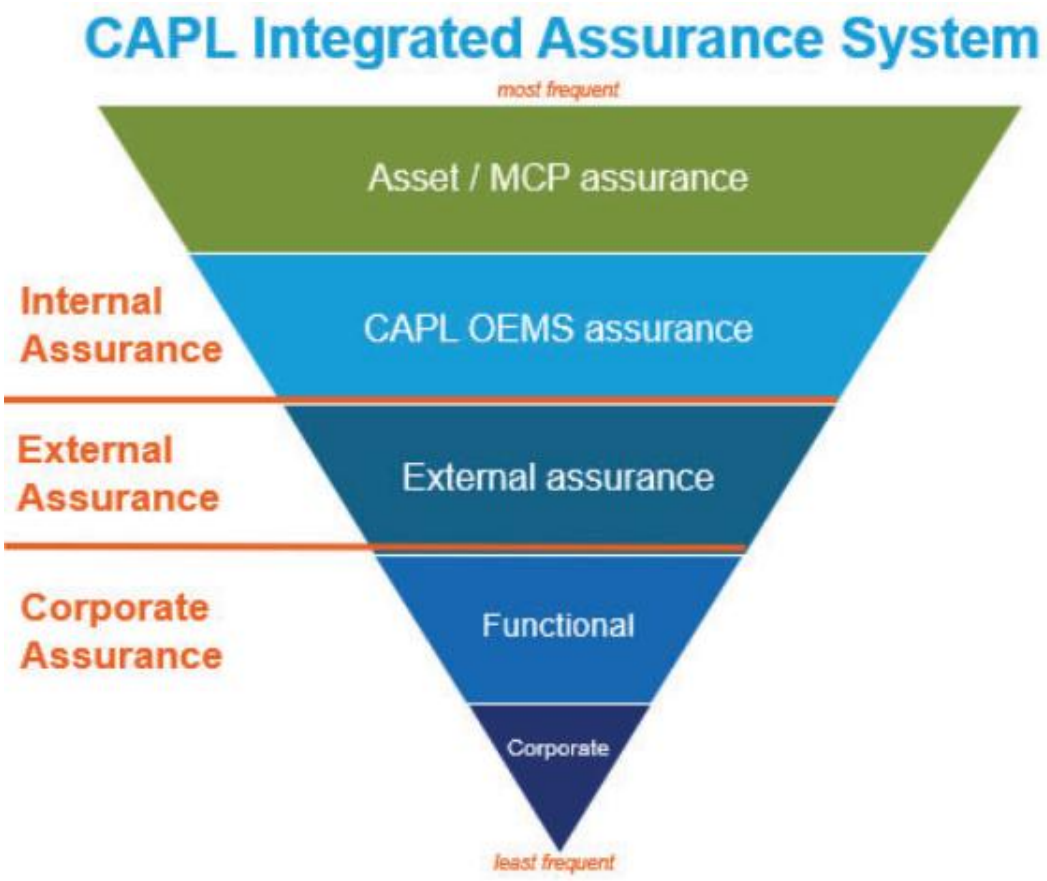


Figure 9-4: ABU integrated assurance system

To support the implementation of the *ABU OE Assurance Process* (Ref. 70), CAPL have developed an ABU integrated assurance system (Figure 9-4), which integrates and leverages assurance activities across the various levels of CAPL business through to the corporate level—to provide confidence that safeguards are in place and functioning as intended. This integrated assurance system includes:

- asset / facility / function assurance: ongoing, routine, planned verifications of safeguards specific for the asset / facility (e.g. HSE inspections, audits, asset integrity inspections, preventive maintenance, emergency drills and exercises, compliance reviews, performance reviews)
- ABU OEMS assurance: implemented through the established system-based assurances within the OEMS and ABU OE processes (e.g. assessments, reviews, audits, inspections, workshops, engagements) that support the CAPL assets and major capital project assurance plans and identify and respond to the systemic deterioration of safeguards and progress areas for improvement
- external assurance: assurance activities undertaken by third-party entities (e.g. regulatory inspections, joint venture partner reviews)
- corporate and functional assurance: assurance activities of CAPL functional groups (e.g. drilling and completions, HSE, FE) and OEMS focus areas to address OEMS requirements, safeguards and areas for improvement.

The *Wheatstone Asset Assurance Schedule* (Ref. 91) documents the specific assurance activities for this EP and is reviewed annually, however it may be updated as required throughout the year based on asset / facility operational risk.

Assurance activities are scheduled on a risk-based approach and conducted to verify the effectiveness of safeguards and verifications and the extent to which requirements are met by CAPL.

Assurance activities focus on in-field activities and administrative processes, depending on the activities being undertaken and assurance priorities (these priorities are based on risk) and provide sufficient demonstration that Environmental Performance Objectives and Environmental Performance Standards have been met and the activity implemented in accordance with this Implementation Strategy. A record of all assurance activities undertaken, and the outcomes, are maintained and actions are tracked until closure.

Field inspections are scheduled based on a risk-based assessment and conducted as documented in the asset assurance plan and may range from monthly, quarterly or six monthly depending on the risk assessment.

Field inspections undertaken by the asset / facility are scheduled based on a risk-based assessment and conducted as documented in the *Wheatstone Asset Assurance Schedule* (Ref. 91). These are planned and may range from monthly, quarterly, six monthly or annual depending on the risk assessment and the type of assurance activity. Some inspections may be in response to a specific event such as cyclone or rainfall event. For example, a dangerous goods warehouse inspection may be assured monthly and a vegetation clearing permit audit may be assured quarterly.

Note that hydrocarbon system integrity inspections (as described in Section 3.4) also have a role in verifying environmental performance. The type and frequency of these inspections is documented in the IM Plans (Ref. 493, Ref. 103).

Environmental Performance Standards in the EP undergo an annual compliance review and evidence is gathered for each Environmental Performance Standard to support the annual environmental report. Assurance related to the Wheatstone Project start-up and operations activities described in this EP will be summarised in the annual report submitted to NOPSEMA (Section 9.4.3).

9.3.6.1 Managing instances of potential non-compliance

The reporting, investigation, and tracking of non-conformances are managed via Chevron's OE Corporate Standard Incident Investigation (Ref. 79) and OE Data Reporting Standard (Ref. 89). These processes apply to instances where the requirements of this EP have not been met. This process is used if audit findings identify that activities in the scope of this EP are not being implemented in accordance with the risk and impact control measures identified in Sections 7 and 8.

Audit findings and corrective actions are recorded and tracked in a CAPL compliance assurance database for timely closure of actions. Audit findings that identify a breach of an environmental performance outcome or environmental performance standard will be reported in accordance with Section 9.4.2.

Any suggested changes to activities or control measures arising from audit findings or instances of potential noncompliance will be subject to a MoC process in accordance with Section 9.3.2.2.

9.3.7 Incident investigation and reporting

Incident investigation and reporting (IIR) expectations are to identify, report, record and investigate incidents, analyse trends, correct deficiencies, and share and adopt relevant lessons learned.

The *Incident Investigation and Reporting (II&R) Execution Manual* (Ref. 87) defines the requirements to report, classify, record, and investigate incidents and near misses, including but not limited to injury, occupational illness, environmental impact, reliability, business disruption, and community concern.

The IIR process includes these requirements:

- training for employees and contractors to recognise and report events
- internal and external notification of events
- investigating incidents at the probable level of consequence, with the rigor of investigation based upon learning opportunity and incident severity
- allocating an incident management sponsor for selected investigations
- sharing alerts, lessons learned, and bulletins
- tracking recommended actions to closure
- analysing event trends.

Events that meet the required criteria are recorded in the CAPL incident management system (IMS). The system holds records of the associated investigation results. The lessons learned from selected investigations are shared to reduce the likelihood of future comparable events.

Specific incident reporting requirements for this EP are detailed in Section 9.4.2.

9.3.8 Emergency management

9.3.8.1 Emergency management arrangements

The emergency management arrangements outline a systematic approach for preventing, planning, responding to, and recovering from emergency events and are intended to provide a standardised corporate management and response structure that details emergency management documentation, Emergency Response Organisation (ERO), facilities and equipment, and training and exercises.

The ERO provides a standardised management and response structure for any emergency. Personnel filling roles within this structure may include full-time professionals, but most will be part-time volunteers drawn from across the workforce.

The system used to organise CAPL's emergency management teams (EMTs) is based on the Incident Command System and provides a standardised approach to the coordination of an emergency response across all hazards, including oil spill response. This program is compatible with the Australasian Inter-service Incident Management System (AIIMS), and the *National Plan for Maritime Environmental Emergencies* (National Plan; Ref. 16) and is consistent with the core aspects presented in the International Maritime Organisation (IMO) equivalent courses.

The ERO comprises the groups listed in Table 9-8; this table also describes the major functions of teams during an emergency.

Figure 9-5 to Figure 9-7 outline the organisational chart of the On-site Response Teams (ORTs) and EMTs. The Crisis Management Teams (CMTs), which focus on the business implications of incidents and events, are further described in the *ABU Crisis Management Plan* (Ref. 74).

As the incident escalates and the workload of each function increases, it may be necessary to delegate specific roles to additional people within each section. These roles may lead a team of people to fulfil the tasks under their control.

To establish emergency 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, CAPL has adopted a tiered approach in its response system. This tiered-response model scales the number of resources mobilised for a response, and the emergency team activated, according to the severity of the incident. This approach is consistent with the *International Convention on Oil Pollution Preparedness, Response and Cooperation 1990*. The response tiers and resources that may be mobilised for an oil spill incident within CAPL are further described within the OPEP (Ref. 102).

Table 9-8: CAPL emergency management teams

Team	Description
Tier 1 (CAPL)	
On-site Response Teams (ORTs)	Trained responders at the installation who are responsible for on-scene tactical response operations during an incident. ORTs are led by an On-scene Commander (OC) who has incident control during smaller Level 1A incidents, which do not require further escalation to an incident management team. If the IEMT is activated, the OC will come under the direction of the Operations Section Chief (OSC).
Installation Emergency Management Team (IEMT)	The IEMT is led by an Incident Commander (IC) and operates out of an on-site emergency command centre. The IEMT may be activated to take control of Level 1B incidents and coordinate local resources and ORTs.
Perth Emergency Management Team (PEMT)	The PEMT is led by an IC and operates out of a Perth-based emergency command centre. The PEMT may be activated in a support role to assist IEMTs with the emergency response to major incidents that require coordination of further resources, personnel, and support. If required, incident control may also be transferred from the installation to the PEMT to manage the ongoing response (proactive phase) for long-duration, complex incidents such as a major oil spill. The PEMT stands up at the direction of the PEMT IC for Level 2 and 3 incidents.
CAPL Crisis Management Team (CMT)	Comprises senior CAPL executives and ensures emergency response and crisis management operations are carried out consistent with The Chevron Way, Chevron Corporation policies, and the tenets of OE. The CMT stands up at the direction of the CAPL Crisis Manager for Level 3 incidents.
Tier 2 (Regional Response)	
Chevron Corporation's Asia–Pacific Regional Response Team	An enterprise-level team able to support CAPL during the initial response (reactive phase) to a significant incident and help manage the transition to the ongoing response (proactive phase).
Tier 3 (Global Response)	
Chevron Corporation's Functional Response Teams	Enterprise-level teams with specific technical expertise in selected command staff positions and unit positions in the Planning, Logistics, and Finance sections. Team members are trained to support the management of global- and regional-level (Tier 2 and 3) incidents but are available to support any response.

Team	Description
Chevron Corporation's Worldwide Emergency Response Team	An enterprise-level team of Chevron Corporation's most highly trained and experienced personnel capable of filling IMS command and general staff roles of a response organisation, including Deputy IC. Team members are trained to support the management of global-level (Tier 3) incidents but are available to support any response.
Chevron Corporation's Advisory and Resource Team	An enterprise-level initial assessment and support team available to advise during the initial stages of a significant event, assess incident potential, and help the local response team marshal additional resources.

9.3.8.2 Emergency management process

The *Emergency Management OE Process* (Ref. 71) is CAPL's system for emergency management. The process ensures CAPL is prepared to respond immediately and effectively to all emergencies involving contractor- or CAPL-owned or -operated assets as defined in their scope of work.

The emergency management process (Ref. 71) comprises nine key elements.

- emergency scenarios, including worst case, have been identified; these scenarios are based on the findings from risk assessments of significant safety, health and environmental hazards and other sources (e.g. historical incidents)
- ERPs are developed and maintained to address emergency scenarios
- a reliability program is in place for inspection, testing and preventative maintenance of critical emergency response equipment and systems supporting ERPs
- an incident management system (IMS) is in place capable of immediately and effectively managing all emergencies
- a training and exercise program, including minimum training and exercise requirements, has been developed to establish and maintain emergency response capability
- crisis management plans have been developed to address a potential crisis or significant event
- business continuity plans have been developed in conformance with the Business Continuity Planning Corporate OE Process (Ref. 50).

The OPEP (Ref. 102) acts as an operational document to ensure an appropriate response to the emergency events described in this EP. Smaller spills will be monitored, evaluated, and cleaned up as part of routine duties, where relevant and appropriate to the nature and scale of the spill, and will not require activation of the ORT or OPEP. Several emergency management subprocesses are outlined below that are integral to emergency preparedness and management.

9.3.8.3 Chain of command (emergency response)

A well-delineated EMT chain of command has been established for emergency response (Figure 9-5 to Figure 9-7). As incidents grow in size or complexity, command may transfer several times. Within the response structure, command may transfer between On-scene Commanders (OC) at the tactical level. For a major incident, incident command may transfer to a designated Control Agency or to the Perth EMT, if required.

Although the identity of those filling command positions may change over the course of the incident, the continuity of responsibility and accountability will be maintained. Typically, specialists for particular response options will fulfil Task Leader positions in the ORT where they will be expected to oversee a team or particular response operations.

Throughout an incident, a formal handover will be conducted whenever any command or control position is transferred from one person to another.

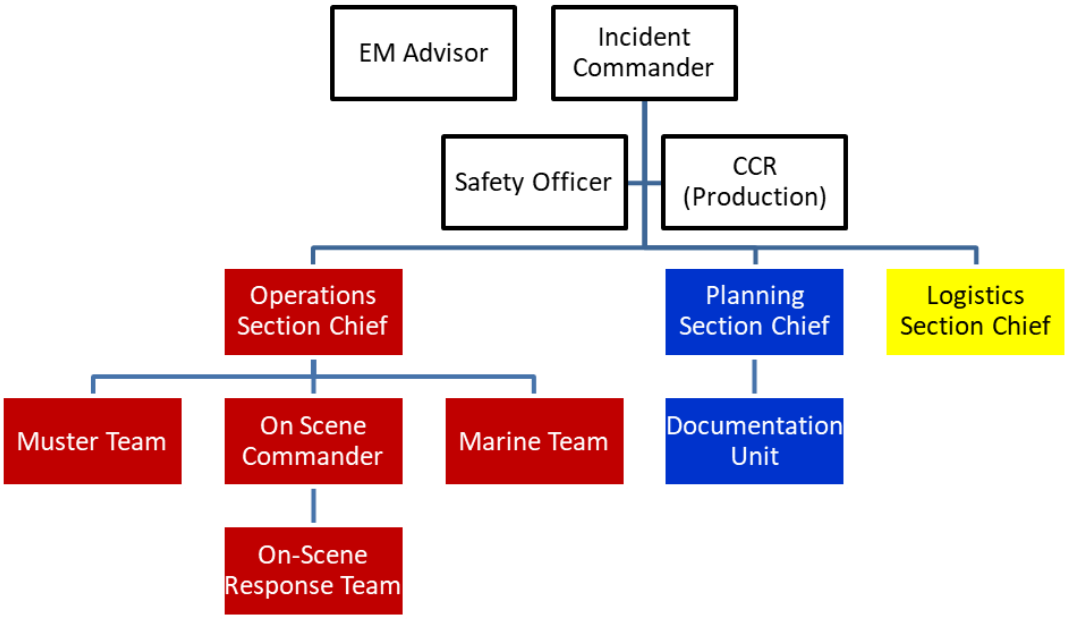


Figure 9-5: Basic installation EMT organisation chart

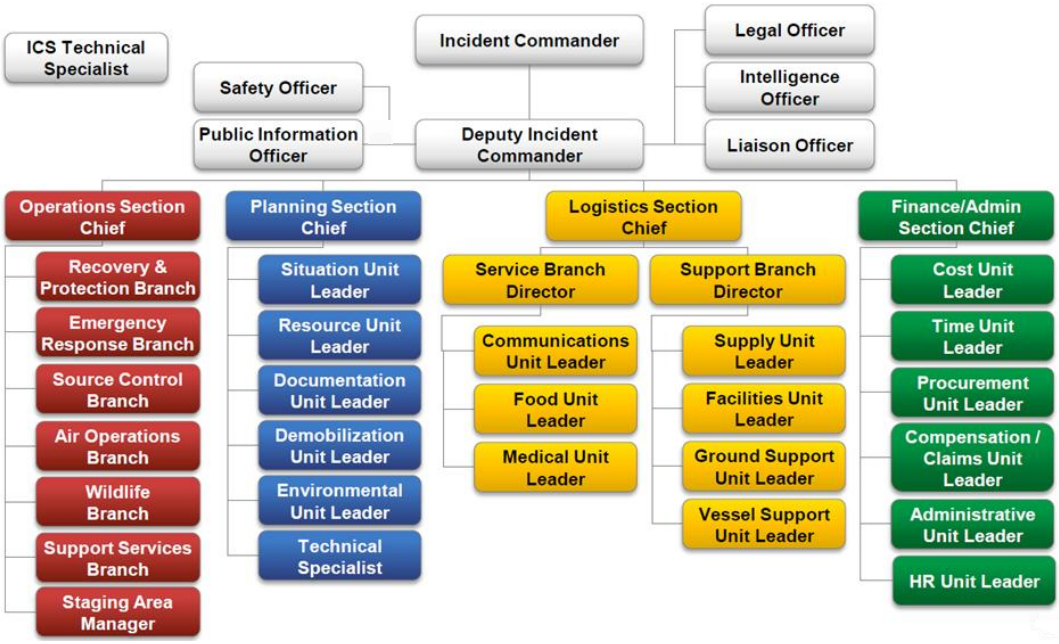


Figure 9-6: Expanded EMT organisation chart

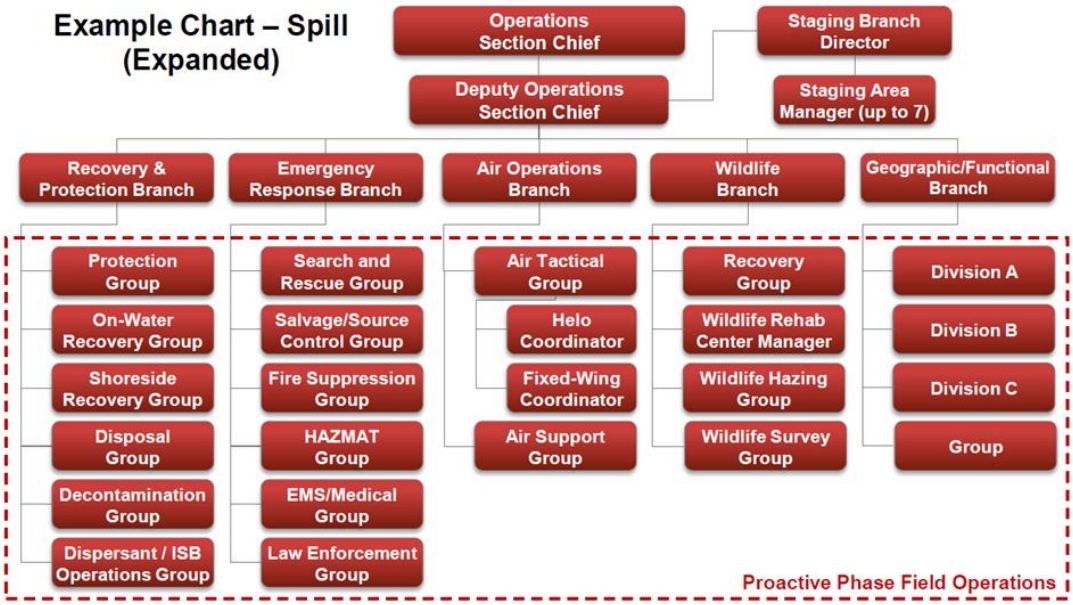


Figure 9-7: Example expanded operations section organisation chart

9.3.8.4 Roles and responsibilities (emergency response)

Table 9-9 provides additional information about the structure of these teams and the key individual roles and responsibilities during emergency response.

Table 9-9: Key roles and responsibilities—emergency response

Role	Responsibilities
On-Site Response Team	
On-Scene Commander (OC) *(Vessel Master)*	• Safely and effectively organises and manages the ORT response operations • Keeps the EMT informed regarding the nature and status of the incident and on-site tactical response operations
Site Safety Officer	• Ensures that appropriate actions are taken to protect the safety and health of ORT response personnel
Task Leader	• Safely carries out their assignment consistent with directions received from the OC, branch director, division, or group supervisor
Emergency Management Team	
Incident Commander (IC)	• Manages the overall emergency response operations and ensures that they are carried out safely, effectively, and efficiently • Establishes direct line of communications with the OC • Mobilises the EMT and assigns additional support from other response teams (as appropriate to the incident) for Level 2 and 3 incidents that require support beyond the ORT
Operations Section Chief (OSC)	• Provides strategic direction and support to the OC and muster and/or shelter area managers • Receives information regarding the nature and status of the ORT and provides support for mustering and/or shelter-in-place operations • Disseminates information to the IC and other members of the EMT

Role	Responsibilities
Planning Section Chief	• Focuses on the incident's potential using the compilation and display of information regarding the nature and status of an incident and emergency response operations • Assists the IC in defining strategic objectives • Assists the IC in providing information to the Level 3 EMT • Compiles and retains documentation
Logistics Section Chief	• Obtains personnel, equipment, materials, and supplies needed to mount and sustain emergency response operations • Provides services necessary to ensure that emergency response operations are carried out safely and efficiently

9.3.8.5 Training and competency (emergency response)

Competencies and training requirements for the EMT, ORT, and other personnel during implementation of the OPEP (Ref. 102) detailed in Appendix G of the OPEP in the *Emergency Management ABU Training and Exercise Program Procedure* (Ref. 54). Competency and training records for personnel, including contractors and subcontractors, are maintained and available via live Oil Spill Response and Emergency Management readiness dashboards.

Training and course information, including frequency and content, are also described in the Chevron *Emergency Management ABU Training and Exercise Program Procedure* (Ref. 54). Training is delivered via a mix of computer-based training or face-to-face, depending on the particular course, and all EMT positions have minimum training and competency requirements identified.

Oil spill response management training has been designed to align with the knowledge requirements outlined in the *Australian Energy Producers (AEP) Guidance Document: Incident Management Teams – Knowledge Requirements for Responding to Marine Oil Spills* (Ref. 22), specifically the general knowledge requirements for all EMT members and the EMT function specific knowledge requirements.

Specific details on the oil spill training packages, including their content and alignment with the AEP guidance, and role specific training requirements can be found in the Chevron Emergency *Management ABU Training and Exercise Program Procedure* (Ref. 54).

9.3.8.6 Oil spill response resourcing and capability

CAPL has multiple EMT resourcing arrangements in place to respond to a potential worst case discharge scenario including internal ABU EMT capacity (inclusive of Source Control Section), Regional and Global CAPL support teams and functional groups, OSROs and industry mutual aid agreements.

Appendix F of the ABU Consolidated OPEP (Ref. 102) outlines CAPL's EMT Resourcing Assessment Plan for an Oil Spill Incident and evaluates EMT capability requirements. It quantifies and justifies the core and support EMT capability requirements required for a generalised loss of well control oil spill scenario (based on 13 weeks) and summarises the assumptions used to develop the EMT capability needs assessment (such as allowances for redundancy, rostering, shift coverage and rotation).

The *PEMT Oil Spill Response Resource Assessment Tool* (Ref. 51) provides a real time assessment of resources available to CAPL to fill the core and support

positions identified in the EMT Resourcing Assessment Plan for an Oil Spill Incident (Appendix F in the ABU Consolidated OPEP [Ref. 102]). Using activity-specific worst-case spill scenarios (such as the MDO and condensate scenarios described in this EP), the tool can demonstrate that sufficient capability is in place.

The *PEMT Oil Spill Response Resource Assessment Tool* (Ref. 51) quantifies the core and support EMT capability requirements specific to the worst credible scenario described in this EP and demonstrates that at the time of writing, CAPL maintains access to personnel to fill these roles (based on information contained within the *PEMT Oil Spill Response Resource Assessment Tool* (Ref. 51).

9.3.8.6.1 CAPL ABU resources

CAPL maintains a PEMT with a 24/7 call out roster available to be stood up at any time if required. This includes 13 on-call positions sourced from a pool of trained personnel. Each on-call PEMT member must be within 1 hour of the Perth office at all times, and the PEMT duty roster enables the formation of the PEMT within 2 hours of notification. Further information on the PEMT is contained in the ABU *Emergency Response Plan – Wheatstone LNG Plant* (Ref. 95).

Current numbers of qualified EMT personnel, including those trained in accordance with the training requirements outlined in the Chevron *Emergency Management ABU Training and Exercise Program Procedure* (Ref. 54), are reflected in the *PEMT Oil Spill Response Resource Assessment Tool* (Ref. 51). In addition, CAPL currently has 'all hazards' personnel, and this capability would be able to be inducted/trained in the oil spill response functions before entering the EMT (as outlined in Chevron *Emergency Management ABU Training and Exercise Program Procedure* [Ref. 54]), as the response transitions from a rapidly evolving reactive response phase to a more proactive, steady-state, project phase response.

9.3.8.6.2 CAPL regional and worldwide global teams

As per the Chevron *Corporate Emergency ABU Response Teams and Resources Procedure* (Ref. 499) the Chevron Centre for Emergency Preparedness and Response maintains a global mutual-aid capability, available on a 24/7 basis to quickly and effectively provide enterprise-wide support for major incidents and events. This capability shall include pre-identified, trained, and fit-for-duty response teams capable of filling Incident Management System positions, access to industry owned response cooperatives, and access to internal experts and key external vendors. It includes the following services.

The Advisory and Resource Team (ART)

The ART is an initial assessment and support team available to provide advice during the initial stages of an event, to assess incident potential, assist the local response team in marshalling additional resources, and to keep corporate management briefed on the situation or incident. The ART is comprised of a management representative from the impacted operating company, a representative of Chevron Centre for Emergency Preparedness and Response, plus a subject matter expert in each of the following areas: public affairs, environmental, safety, and law. The ART team is available via conference call within 2 hours (or less) of notification, and may also mobilise to the incident site to continue with the assessment and provide assistance to the incident management team.

Worldwide Emergency Response Team (WWERT)

The WWERT is a team of Chevron's most highly trained and experienced personnel capable of filling Incident Management System Command and General Staff roles of a response organisation, including Deputy Incident Commander. WWERT members are trained to support the management of global-level (Tier 3) incidents but are available to support any response. Team members are subject matter experts in emergency management and in developing incident action plans.

Functional Teams

There are 13 Functional response teams with specific technical expertise in selected Command Staff positions (safety officer, legal officer) and unit positions in the Planning, Logistics and Finance sections. Functional team members are trained to support management of global and regional level (Tier 2 and 3) incidents but are available to support any response.

Regional Response Teams (RRT)

There are 2 corporate RRTs: Europe/Africa/Middle East; and Asia-Pacific. The RRTs are Regional level (Tier 2) response teams trained to support the initial response (reactive phase) of a significant incident within their respective regions and assist in managing the transition to the ongoing response (proactive phase). The RRTs include personnel capable of filling positions including the Deputy Incident Commander, and Section Chiefs for the Operations, Planning, and Logistics Sections, and specialist to fill the Safety, Documentation, and Public Affairs/Liaison positions.

9.3.8.6.3 Oil spill response organisation arrangements

CAPL maintains contractual arrangements with oil spill response organisations (OSROs), which include providing technical specialists to supplement the CAPL EMT, as detailed in the OPEP (Ref. 102).

Australian Marine Oil Spill Centre (AMOSC)

CAPL is a participating company in AMOSC. This arrangement provides CAPL with access to the AMOSC personnel and the AMOSC Core-Group, under AMOSPlan.

The AMOSC Core-Group is an Australian industry initiative that was initially crafted in 1992. It is unique within the international context and is noted for being innovative and effective to rapidly expand and surge well trained personnel into a spill response. The AMOSC Core-Group has attended most Australian-based spills and also several offshore spills.

The AMOSC Core-Group averages around 100 personnel at any one time (subject to fluctuations), with expertise split between the incident management team and field based personnel.

AMOSC Core Group policy requires all Core-Group personnel to undertake initial training, followed by competency revalidation/training every 2 years. Typically, AMOSC manage the Core-Group revalidation/training by conducting 3 one-week Core-Group training/workshops per year. AMOSC coordinates the routine testing, monitoring and monthly reporting of Core-Group personnel availability.

Oil Spill Response Limited Centre (OSRL)

CAPL is a Participant member with OSRL, which guarantees access to Tier 3 technical advice, resources and expertise 365 days a year on a 24-hours a day basis. OSRL have capacity to mobilise additional equipment and personnel to ABU from their global bases. Anyone within the ABU PEMT can notify OSRL of an incident, however only the nominated CAPL personnel may request the assistance of OSRL using the Mobilisation Form, as per the Service Level Agreement.

The OSRL service level statements provides for:

- 24/7 call-out arrangements
- guaranteed initial response from OSRL of 5 technical support personnel (EMT or field personnel) for 5 days
- surge to guaranteed 18 OSRL personnel, upon request from the CAPL EMT
- depending on size/complexity, OSRL maintain 80 response team personnel globally, who are potentially able to be provided to support an ongoing Level 3 event, on a best-endeavours basis.

OSRL service level statement defines the types of services provided by the 18-person surge capability as:

- technical advice and incident management coaching within the command centre
- developing an Incident Management Plan
- Tier 1 / 2 equipment readiness and contractor training
- in-country logistics planning and support for inbound equipment
- impact assessment and advice on response strategy selection
- Shoreline Clean-up Assessment Technique and aerial surveillance / quantification surveys
- tactical response planning.

9.3.8.7 Oil spill exercise schedule

The CAPL *Emergency Management 5 Year Training and Exercise Schedule* (Ref. 90) describes the schedule of training and exercise required for all emergency events. The training and exercise program incorporates CAPL's oil spill exercise schedule for oil spill training, drills, and exercises. As CAPL'S response arrangements are common among its assets, and resource capabilities are shared, the testing and exercise schedule has been developed to test the various response options. The focus changes for each exercise to ensure any unique aspects of that location (e.g. resources at risk, first-strike equipment) are tested.

The objective is to test and maintain the capability to respond to emergency events. The exercises aim to test:

- notification, activation, and mobilisation of the ORT and EMT
- efficiency and effectiveness of equipment deployment
- efficiency and effectiveness of communication systems.

The testing schedule is a live document that is subject to change. The *Emergency Management 5 Year Training and Exercise Schedule* (Ref. 90) outlines the proposed testing arrangements to be completed, including the exercise types and

proposed level of response to be tested that may be used to meet the defined objectives. A minimum of one test for each level will be conducted each year.

Table 9-10: Exercise types

Type	Details
Notification exercise	• Tests the procedures to notify and activate the EMTs, support organisations, and regulators
Tabletop exercise	• Normally involves interactive discussions of a simulated scenario amongst members of an EMT; personnel or equipment are not mobilised
Drill	• Conducts field activities such as equipment deployment, shoreline assessment, monitoring etc.
Functional exercise	• Activates at least one EMT to establish command, control, and coordination of a serious emergency event • Often more complex as it simulates several different aspects of an oil spill incident and may involve third parties.

Table 9-11: Exercise levels

Level	Details
Level 1 – ORT	• May be held in conjunction with a Level 2 EMT exercise • Designed to evaluate the ability of ORTs to implement CAPL's Emergency Management System as it applies to ORTs • ORTs are encouraged to conduct as many exercises as they want each year that do not include the ERT or a Level 2 EMT
Level 2 – EMT	• Exercises may include the participation of an ORT and may be held in conjunction with a Level 3 EMT exercise • Usual duration – one to two hours • Designed to evaluate a Level 2 EMT's ability to notify and activate team members, set up a Level 2 EMT emergency command centre, and implement CAPL's Emergency Management System as it applies to Level 2 EMTs
Level 3 – EMT	• Each exercise may include the participation of a Level 2 EMT and/or ORT • Usual duration – three to six hours • Designed to evaluate the EMT's ability to notify and activate team members, transfer command to a Level 3 EMT Emergency Command Centre and implement CAPL's Emergency Management System as it applies to incident escalation
Oiled Wildlife	Exercises may include the participation of an ORT and may be held in conjunction with a Level 3 EMT exercise • Usual duration – 3–6 hours • Designed to evaluate the Oiled Wildlife Branch's ability to notify and activate OWR teams and implement a response in line with ABU and DBCA oiled wildlife plans and manuals.
Operational and Scientific Monitoring (OSMP)	Exercises may be held in conjunction with a Level 3 EMT exercise, or conducted as a standalone exercise • Usual duration – 3–6 hours • Designed to evaluate the EMT's ability to notify and activate OSMP team members and external service providers, and test the arrangements and capability in place for operational and scientific monitoring.

The training and exercise program outlines the process for evaluating training, drills, and exercises against defined objectives, and incorporating lessons learned. An after-action report is generated for all Level 2 (and above) exercises, which is used during spill exercises to assess the effectiveness of the exercise against its

objectives and to record recommendations. Relevant actions are then assigned to the responsible party where they are tracked to completion using internal processes. Exercise planners will be required to refer to previous recommendations for continual review and improvement.

Response arrangements as detailed in the OPEP (Ref. 102) must be tested:

- when they are introduced
- when they are significantly amended
- not later than 12 months after the most recent test
- if a new location for the activity is added to this EP after the response arrangements have been tested, and before the next test is conducted: test the response arrangements in relation to the new location as soon as practicable after it is added to this EP.

9.3.8.8 Onshore oil spill contingency plan

For onshore spills, response activities will be undertaken in accordance with the *Emergency Response Plan – Wheatstone LNG Plant* (Ref. 95) and this onshore oil spill contingency plan (OSCP). This section has been developed to demonstrate compliance with Regulation 15(8) of the PPER.

Preparations to be made for the possibility of an oil spill

CAPL has made the necessary preparations to respond in the event of an oil spill. This has been done through:

- development and documentation of a clear emergency management process (Section 9.3.8.2)
- development of a clear chain of command and emergency management team structure (Section 9.3.8.3)
- delineation of roles and responsibilities in the event of an emergency (Section 9.3.8.4)
- training key personnel identified in emergency response roles (Section 9.3.8.5)
- maintain an oil spill response exercise schedule to ensure response arrangements are understood, and any gaps clearly identified (Section 9.3.8.7).

Emergency response arrangements to be implemented if an oil spill occurs

In the event of an emergency, the arrangements detailed in Section 9.3.8.1 will be implemented. Specifically, the first-strike response tasks described in Table 9-12 will be implemented for an onshore pipeline (PL 99) spill.

The ABU Emergency Contact Directory (Ref. 94) provides a consolidated list of emergency contact details for all CAPL operating locations and for all types of emergency incidents. This includes government agencies and contractors that may be relevant during emergency events.

Table 9-12: Initial (first-strike) response actions checklist for onshore pipeline (PL 99) release

Responsibility	Task	Consideration	Complete
Observer – first person at scene	Ensure their own safety and the safety of those nearby before taking any actions		☐

Responsibility	Task	Consideration	Complete
	Raise the alarm (radio, tetra, etc.) and provide specific details about the incident		☐
	If qualified and if it is safe to do so, attempt to control the source of the spill	Steps may include: • single-point control (righting overturned container, patching hole in ruptured container, move to secondary bunding, etc.) • transfer equipment control (shut down pumps, close valves, isolate source, etc.)	☐
	Remain in a safe location at the site of the incident and provide updates on the incident until relieved by the On-Scene Commander (OC)		☐
Supervisor	Ensure their own safety and the safety of those nearby before taking any actions		☐
	Take immediate actions to control the source of the spill	Take appropriate steps as described in the relevant ERP or Procedure to stop, minimise, or control the escape of oil into the environment.	☐
	In all instances (where possible), notify the relevant Security Operations Centre (SOC) and the Central Control Room (CCR) **Barrow Island SOC: (08) 9184 3581** **Wheatstone SOC: (08) 9184 7444**		☐
	Identify as much information as possible about the spill incident, including but not limited to: • any injuries, other hazards • location and coordinates, if known • oil type • source of oil • volume of spill • spill rate (if applicable) • if controlled or continuing to spill • weather, tide, and current details • any nearby habitat/shoreline type,	Information to help identify the oil type includes: • signs on nearby tanks or pipelines from which the substance could have originated • labelling on packaging • visible sheen on water surface • Safety Data Sheets	☐

Responsibility	Task	Consideration	Complete
	proximity to inland waterways, etc. • apparent trajectory of the spill		
	For all spills from PL 99 verbally notify DMPE **as soon as practicable**, to inform them of the incident		☐
SOC and the CCR Supervisor	Capture key details relating to the incident from the reporting party	Confirm the incident report (via fixed systems, closed-circuit television [CCTV], on-scene witness)	☐
	Activate, via the automated alert system, the ORT, and/or the relevant EMTs		☐
	If required, initiate emergency shutdown and depressurise or isolate (process, power, water, etc)	Initiate remotely activated systems (if required)	☐
On-Scene Commander (OC)	Confirm the nature and location of incident with the SOC or CCR		☐
	Establish the Command Post (CP) upwind of the incident and establish site control by securing the perimeter where practicable	Conduct risk assessment; assess the nature of the emergency, and safe approach routes to determine the potential CP location	☐
	Communicate directly with Emergency Response Team (ERT) members upon deployment to the incident scene and confirm resource/equipment requirements		☐

Recovery arrangements to be implemented if an oil spill occurs

In the event of an onshore pipeline release, CAPL will control the source in accordance with the following steps:

- shut in the field, process equipment, and/or isolation valves to stop the leak
- allow pipeline to depressurise.

In the event of an onshore pipeline release, CAPL will contain and recover the hydrocarbons where practicable in accordance with the following steps:

- spread absorbent material on affected ground surface
- remove (excavate) and replace absorbent product as required until evidence of hydrocarbon draw ceases
- remove contaminated product to a lined/bunded disposal holding area (to be designated in the event of a spill)
- excavate hydrocarbon contaminated soils
- remove contaminated soils to the designated disposal holding area

- sample contaminated soils against solid waste to landfill guidelines to determine method of disposal
- sample soil underneath and around contaminated site to determine if all contamination has been removed.

Once the emergency response has been terminated, further sampling and monitoring may be required. The longer-term monitoring and remediation of the site may come under the *Contaminated Sites Act 2003* and Contaminated Sites Regulations 2006, administered by DWER.

Current oil spill trajectory modelling that applies to the pipeline activity

As detailed in Section 7.1.4, CAPL calculated the potential worst case release volume from PL 99 based on flow and pressure at the onshore location, and the time taken to isolate the inventory. The release was determined to be ~100 m^3 of condensate. In accordance with Section 5.4.4 (Trajectory Modelling) of DMPE *Guideline for the Development of an Onshore Oil Spill Contingency Plan* (Ref. 193), the onshore zone of potential impact has been described in Section 7.1.4 based on the soil profile and hydraulic conductivity around and adjacent to PL 99, depth to groundwater, and the characteristics of the condensate that may be released.

9.4 Environmental monitoring and reporting

9.4.1 Environmental monitoring

Emissions and discharges to the environment from the petroleum activities will be monitored, as defined in the performance standards and measurement criteria (Sections 7 and 8).

Regulation 22(6) of OPGGS(E)R and Regulation 15(7) of the PP(E)R requires that the implementation strategy provides for sufficient monitoring of, and maintaining a quantitative record of, emissions and discharges such that this record can be used to assess whether the environmental performance outcomes and standards in the EP are being met.

CAPL and vessel contractors will monitor and record emissions and discharges as detailed in Sections 7 and 8 to ensure that that this record can be used to assess whether the environmental performance outcomes and standards in this EP are being met.

If an emergency condition resulting in a Level 2 or 3 spill event occurs, CAPL will implement the OSMP (Ref. 101), which is identified as a control measure in Sections 8.1, 8.2, and 8.3. The OSMP describes a program of monitoring, and is the principal tool for determining the extent, severity, and persistence of environmental impacts from an emergency condition and the emergency response activities to be undertaken by CAPL.

9.4.1.1 Platform wastewater discharges monitoring framework

The following sections describe the monitoring framework for platform discharges in Commonwealth waters during normal operations.

Considering the nature and scale of the platform discharges, and the potential risks and impacts (described in Sections 7.2.6 and 7.2.7), the PW discharge is the focus of the Waste Water Discharges Monitoring Framework; however, potential constituents from other discharges are also included, where relevant.

The framework ensures the nature, extent, and potential effect of the PW and other discharges are assessed, and helps determine changes to water quality, sediment quality and benthic habitats in relation to applied environmental quality criteria (EQC).

The framework comprises several monitoring program components (Table 9-13). Figure 9-8 outlines the overall monitoring framework, the relationships between the various elements and the activities that trigger changes.

Table 9-13: Platform wastewater discharges monitoring framework—monitoring programs

Monitoring program	Frequency
Routine topsides monitoring	• Continuous, daily, weekly, quarterly, annual (refer to Table 9-14) • Additional monitoring as a result of trigger actions
Field sampling (water quality, sediment & benthic habitats)	• 5 yearly • Additional field sampling as a result of trigger actions or water quality and/or sediment assessments
Model verification	• Model verification as a result of a trigger actions • Validation during operational field sampling campaigns
WET testing (or equivalent)	• Quarterly surrogate test (indicatively 2-species) (minimum annual) • 3 yearly multi (indicatively 8) species test • Additional WET testing as a result of trigger actions, chemical changes or significant PW composition changes

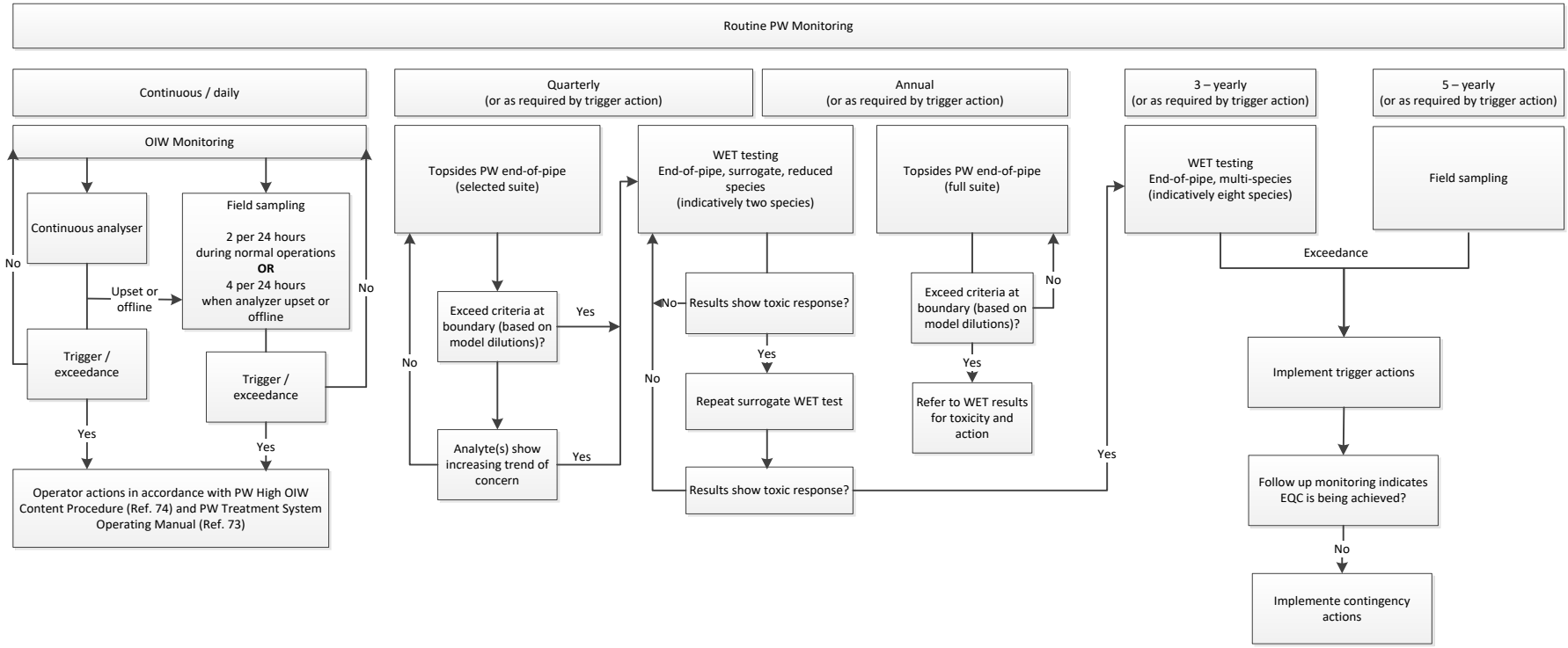


Figure 9-8: Platform wastewater discharges monitoring framework

9.4.1.1.1 Topsides monitoring

The objective of the topsides monitoring program is:

- to use data collected from topsides PW and CW discharges, combined with modelling, to assess whether ANZG Guidelines or equivalent (e.g. developed Environmental guideline criteria (EGC)) are likely to be exceeded beyond the discharge zone boundary and for how long this has or will continue to occur (duration).

The main components of topsides monitoring are listed in Table 9-14; full details are included in the Waste Water Discharges Management Plan (Ref. 73).

Table 9-14: Platform wastewater discharges—topsides monitoring

Aspect	Parameters	Frequency
Produced water	Discharge volume (online flow meter)	Normally continuous
	TPH (platform laboratory analysis, typically using a Horiba or similar)	Normally twice every 24 hours, more frequently as required*
	Full Suite Characterisation (samples collected on platform and analysed on Platform or at an onshore laboratory) for selected analytes that may be present in PW: • Metals (total and dissolved) • Process Chemical markers (when discharging) • Selected PAH (including naphthalene), organic acids, glycols (including MEG and TEG), phenols. • Physical and chemical parameters	Annual
	Selected Suite Selected analytes will be analysed quarterly. Analytes targeted are those regularly present and informative towards PW toxicity. Analytes are subject to review and update as per Section 9.4.1.1.8: • Metals (total). • BTEX • Phenols	Quarterly*
Cooling Water	Hypochlorite concentration	Quarterly
	Temperature	Quarterly
	Discharge volume	Normally continuous
Platform Drainage	TPH (platform laboratory analysis, typically using a Horiba or similar)	Weekly when discharging
Sewage	Calculated volume and percentage of macerated compared to un-macerated sewage discharged to the marine environment	Monthly

** Refer to Section 9.4.1.1.8 for alterations to monitoring of analytes*

9.4.1.1.2 Field sampling

Monitoring of water quality, sediment and benthic habitats was undertaken prior to start-up ('baseline') and will occur every five years. More frequent field sampling may also be implemented as a result of trigger exceedances.

Baseline survey

Sampling of water quality, sediments, and benthic habitats was undertaken prior to commencement of start-up (but after installation and dewatering activities) to establish baseline levels of constituents and conditions for future comparisons during Operations. Although the term baseline has been used for the pre-operational sampling, it should be noted that previous construction activities have already occurred at the site. Therefore the baseline is not reflective of a longer term ecological baseline (prior to any works), but is reflective of a 'before' discharge sampling.

Operational survey

Operational field sampling will be optimised and altered using data collected during baseline sampling as well as collected during operational topsides monitoring. Field sampling programs will be refined and optimised to monitor potential long-term and cumulative impacts as well as providing ground-truthing as to the reliability of the discharge model to predict plume locations.

Data on benthic habitats, water quality and sediment quality will be collected from up to 12 sites located within the predicted discharge zone boundary, and from up to 36 control sites located outside of the predicted discharge zone boundary. Site selection and parameters measured will be tailored for each of the monitoring scopes of water quality, sediments, and benthic habitats.

Water quality

The objectives of the water quality monitoring program include:

- use baseline and reference site data to assess the impact of PW and CW discharges on the receiving environment
- where topside monitoring indicates EQC are likely to be exceeded beyond the discharge zone boundary and exceedances are likely to continue and are not easily mitigated, field samples will be collected using an appropriately scaled sampling program based on the nature, extent, magnitude and duration of exceedances to verify the spatial extent and severity (magnitude) of the water quality exceedances and verify the accuracy of modelling.

Water quality sampling surrounding the platform will be undertaken to allow for the detection of potential impacts associated with discharges to the marine environment. Samples will be collected at sites outside and within impacted areas along transects that follow the dominant currents. Sites deemed outside will be approximately two to five kilometres away from the platform to ensure the waters are not influenced by the discharge. Sites within the discharge zone boundary will be sampled to allow the extent of any potential impacts to be quantified during operation of the platform.

Sites on the discharge zone boundary will also be sampled to compare with model predictions. The design will include up to 12 replicate sites within the discharge zone and up to 36 sites in the control zone, with replicate samples collected from each site near the surface and bottom of water column. The design will allow for a comparison of potentially impacted areas against unimpacted areas, which are subject to natural variation.

During operations, in situ water quality monitoring will be done in the direction of the prevailing current at increasing distance from the platform, to examine dilution of PW out to, on, and beyond the 850 m boundary. Reference sites for water quality will be collected up-current of the platform, data from which will represent background water quality. Sampling will be done over consecutive days (minimum

of 5 days) and on different tidal cycles during the day. During each sampling event the prevailing current direction will be identified adjacent to the outfall, and information on sampling the co-ordinates, depth, time and date of each sample will be recorded. Data collected over the sampling period will be compared with ANZG guidelines (Ref. 20) and any developed EQC, using summary statistics (average, median).

Water samples collected during field surveys will be undertaken in accordance with ANZG guidelines (Ref. 20), but having regard for the logistical and environmental constraints that exist given the isolated nature of the Platform (e.g. constraints on holding times).

Sediment composition

The objectives of the sediment monitoring program include:

- use baseline and reference site data to assess the impact of discharges on the receiving environment;
- quantify changes to sediment quality conditions that may be caused by discharges from the Wheatstone Platform;
- verify sediment composition where routine topside monitoring indicates ANZG guidelines (Ref. 20) are likely to be exceeded beyond the discharge zone and exceedances are likely to continue.

Based on reservoir analyses, forecast PW flow rates, and the level of constituents, preliminary calculations predict very low build-up rates, making the risk of sediment contamination low (Ref. 185).

In situ sampling of sediments surrounding the platform will follow a similar design as described for *Water Quality* (above) and will be undertaken 5-yearly (or on trigger). Where topside monitoring indicates ANZG guidelines (Ref. 20) are likely to be exceeded beyond the discharge zone, exceedances are likely to continue and are not easily mitigated, field samples will be collected to verify the spatial extent and severity (magnitude) of exceedances and the accuracy of modelling. These surveys will be appropriately scaled based on the nature, extent, magnitude and duration of exceedances.

More than 90% of the cover of the platform site and its immediate vicinity comprises hard rock with a thin veneer of sand, and a rock blanket is directly below the discharge caisson. Therefore, traditional grab techniques are difficult and unreliable. Sampling methods will be investigated to achieve opportunistic sampling of sediment patches. Survey will include up to 12 replicate sites within the discharge zones and up to 36 sites in the control zone, with replicate samples collected from each site.

Sediment samples collected during field surveys will be undertaken in accordance with ANZG guidelines (Ref. 20), but having regard for the logistical and environmental constraints that exist given the isolated nature of the Platform (e.g. constraints on holding times).

Benthic habitats

The objectives of the benthic habitats monitoring program include:

- to verify benthic habitat condition where field sampling indicates that ANZG guidelines (Ref. 25) for water and/ or sediment have been exceeded beyond the mixing zone(s) and exceedances are likely to continue;

- to quantify natural changes to sessile benthic habitats through time (every five years) to assist in inferring the cause of changes detected when benthic habitat surveys are triggered in response to an exceedance of water quality guidelines, described in (ii) above or to examine any potential chronic or cumulative impacts.

Benthic habitat surveys occurred prior to discharge of PW and CW (baseline); and will occur within the first five years of operations and thereafter every five years. This is based on the modelled predictions that seafloor fauna are likely to be exposed only to very dilute levels of contaminants given the water depth at the platform and that the discharge plume will be positively buoyant. However, in the event that field sampling of water and/ or sediment indicates that ANZG guidelines (Ref. 25) have been exceeded, then benthic habitats will be surveyed using an appropriately scaled sampling program based on the nature, extent, magnitude and duration of exceedances.

Benthic habitats surveys surrounding the platform will follow a similar BACI designed as described for Water Quality (above). Surveys will characterise the spatial extent, distribution, benthic cover and/or abundance and community composition (at a suitable taxonomic resolution to differentiate communities) of benthic habitats. Receptors to be assessed in benthic habitat surveys will include sponges and gorgonians. These taxa were identified as the dominant sessile benthic biota in the ridgeline habitat (Section 4.3.3.4.1), they create habitat for other species and are potentially at greatest risk from contaminant exposure due to their sessile (fixed) nature. Photosynthetic taxa, such as algae, seagrasses and hermatypic corals appeared to be largely absent at locations surveyed.

Surveys will use a ROV (or similar), to capture footage of benthic habitats, which can be used to quantitatively assess habitat and biota types. Typically, surveys will use five replicate 50 m transects at each site representing control and potentially impacted areas.

Power to detect change above natural variation is predominantly related to the effect size we wish to detect, the natural variability in the parameter to be measured and the level of replication in the sampling design. Baseline sampling was undertaken to understand the spatial distribution, cover and/or abundance of benthic biota surrounding the Wheatstone Platform. Following this initial survey, natural variability was examined for key parameters.

For major taxonomic groups of sessile biota (i.e. sponges and gorgonians) the sampling design employed will aim to achieve detection of a 20% change in benthic cover and/or abundance, above natural variation, with a high level of statistical power (power >0.8). A change of 20% in benthic cover and/or abundance was chosen since sessile benthic communities surrounding the platform appear to be relatively sparse (Section 4.3.3.4.1) and detection of any smaller change in cover and/or abundance (e.g. 10%) is likely to result in a logistically unfeasible level of replication to achieve a high level of power. However, whilst every effort will be made to achieve a high level of power to detect a 20% change in key taxonomic groups, where certain groups are very low in cover and/or abundance (e.g. <5%) and/or are highly variable in space and time, it may not be possible to achieve such power. In this instance, the design will still aim to detect a 20% change, however, the power to detect such a change may be less than 0.8. Where power to detect changes is less than 0.8, then a gradient approach and or multiple lines of evidence will be used to compliment formal statistical tests, and used in the assessment of possible impacts, such that the ability to describe changes in the environment is not impeded by low power.

Although fish have been identified as potentially at risk, they are not proposed to be monitored as part of the initial and ongoing, routine monitoring programs because they are inherently variable in abundance due to both natural factors (e.g. currents, tidal cycle, time of day), artefacts of sampling method (e.g. avoidance or attraction behaviour towards ROVs and lights) and physical presence of the platform (avoidance or attraction behaviour), making detection of change and inference of the cause of change difficult, even with a large sampling effort.

However, if results of sediment monitoring, water quality monitoring (including quarterly topside monitoring) or WET testing, describe changes that may have deleterious effects on fishes and related species (i.e. crustaceans) beyond the discharge zone boundary, then monitoring of fish will be implemented during operations. The monitoring would focus on demersal fish that may be exposed to chronic/long-term impacts, and not pelagic fish that are generally more transient in nature and thereby less likely to receive chronic exposure. Transient, pelagic fish also pose problems for detecting and inferring change due to high spatial and temporal variability. Due to the limitation of baseline data, monitoring would use an Impact versus Reference, Gradient and/or Lines of Evidence approach as described in the OSMP, Scientific Guidance Notes (SCI7a – Fish and Aquaculture Impact Study).

9.4.1.1.3 Model verification

Model verification was undertaken in 2018 for PW (Section 7.2.6) and CW (Section 7.2.7). In both cases in-field verification using dye release, drone and an ROV (mounted fluorometer and physical samples) showed modelling to conservatively underpredict actual in-field dilutions. For cooling water, modelling drastically underestimates nearfield mixing because of the presence of entrained air and for produced water modelling underestimates appear to be due to platform-induced turbulence (local flow concentration through the platform and associated turbulence around the base, legs and structural cross-members) which induces additional mixing in the platform lee (Ref. 187). This confirms that end-of-pipe monitoring combined with modelling provides a conservative estimate of the extent of the mixing zones for PW and CW discharges in order to be meet the EPO.

Collection of water quality data during 5-yearly field sampling (as per Table 9-13) will be used to validate that topside monitoring combined with modelling provides a reliable prediction of the extent of the mixing zones for PW and CW discharges. Further model verification may be undertaken as a trigger action should discharge conditions be significantly different from those modelled.

9.4.1.1.4 PW whole effluent toxicity testing

WET testing has been undertaken post start-up on a quarterly basis (>3 years). WET testing employed a combination of monthly proxy testing, 8-species and 3-species tests and has provided a basis for establishing a robust operational WET testing approach (Ref. 6). Surrogate WET tests (indicatively 2-species) will occur quarterly (and not less than annually refer Section 9.4.1.1.8), with multi-species (indicatively 8-species) to occur at least every three years, or as required based on trigger actions and response.

As shown in Figure 9-8, if the results of a surrogate WET test indicate a toxic response at the discharge zone boundary, the surrogate WET test will be repeated within a reasonable time (having regard for logistics and weather). If the repeat test also indicates a toxic response at the discharge zone boundary, a multi species toxicity test (indicatively 8 species) will be implemented at the next monitoring

event. A toxic response at the discharge zone boundary from the multi species toxicity test will trigger the trigger / contingency action process. If the initial or repeat surrogate WET test show no toxic response at the discharge zone boundary, routine testing will resume.

At any stage, WET testing may be instigated sooner as a result of trigger actions or if a change in production chemicals introduces new constituents of concern and/ or disclosure from the chemical supplier is insufficient to confirm that the topsides monitoring suite is sufficient to monitor a new production chemical.

WET testing of PW collected from the topsides will be undertaken in accordance with ANZG guidelines (Ref. 20) but having regard for the logistical and environmental constraints that exist given the isolated nature of the Platform (e.g. constraints on holding times). Samples will be collected, stored, and transported according to the relevant parts of AS/NZS 5667.1:1998, and all tests will be conducted by laboratories using National Association of Testing Authorities (NATA) accredited methods where possible.

Outcomes from WET testing will feed into the review process to help define triggers that are appropriate for the sensitivity of local organisms. The tests will enable the discharge criteria to be validated or amended if required, based on actual and relevant toxicity results, as well as provide additional information to assess trigger/contingency plans.

9.4.1.1.5 Review process

Oil in water / TPH monitoring review

As described in Section 7.2.6, TPH is sampled and analysed offshore by the platform laboratory and trended by an analyser. Operations are managed to achieve the performance standard of daily average 30 mg/L TPH during normal operations:

- laboratory samples are assessed to track performance against Performance Standards, and initiate appropriate management response to manage and mitigate as required
- analyser outputs are trended to evaluate process conditions, and help operators manage water quality in accordance with environmental objectives.

Topsides monitoring, WET testing, and field sampling review

As described in Section 7.2.6, the predicted movement and fate of the PW plume and associated constituents around the platform have been modelled and a discharge zone boundary has been determined (850 m from the platform), at which constituent concentrations are expected to be at or below defined ANZG trigger levels (Ref. 20). Data from topsides monitoring and field monitoring will be reviewed once data is received, including:

- topside comparison against ANZG and other EQC forecast at the discharge zone boundary (i.e. [discharge value / dilution] < EQC).
- field monitoring comparison against ANZG and other EQC, baseline and modelling.

If concentrations of constituents of concern exceed the EQC triggers at the discharge zone boundary, the risks and impacts will be further quantified and the trigger/ contingency action process implemented (refer Sections 9.4.1.1.6 and 9.4.1.1.7).

Results of surrogate WET tests will be reviewed once data is received. If the results indicate a toxic response, the surrogate WET test will be repeated within a

reasonable time (having regard for logistics and weather). If the repeat test also indicates a toxic response, a multi species toxicity test (indicatively eight species) will be implemented at the next monitoring event. A toxic response from the multi species toxicity test will trigger the trigger/ contingency action process. If the initial or the repeat surrogate WET test show no toxic response, routine testing will resume.

Annual summary

On an annual basis, data will be collated and compared to identify longer term trends and improve understanding of platform discharges. Where potential future exceedances of a Performance Standard are identified, trigger actions in addition to those already implemented over the course of the year will be implemented.

9.4.1.1.6 Trigger actions

WET testing and trigger values in the ANZG guidelines (Ref. 20) are concentrations that, if exceeded, could indicate potential adverse environmental impacts, and so 'trigger' a management response, e.g. further investigation and possible topsides actions.

Depending on the nature and scale of the exceedance, a number of trigger actions will be considered by environmental personnel, operators, and laboratory staff. These include action to:

- confirm the exceedance and likely environmental impact, and
- investigate the cause of the exceedance.

The results of the above will determine the necessary corrective actions.

Actions to confirm the exceedance include:

- check analyser reading against laboratory samples
- resampling topside discharges
- undertaking modified or additional topside monitoring (e.g. additional numbers of samples, extending the suite of analyses, reviewing sampling points)

To confirm if adverse environmental impacts have occurred, actions to be considered include:

- re-assessing background water quality, sediment composition, and/or habitat surveys to better inform modelled predictions
- extra WET testing to predict impacts of altered PW composition
- extending or adding receptor monitoring programs (e.g. infauna analyses or increasing the frequency or extent of monitoring).

Actions to investigate the cause of the exceedance include:

- assessing conditions that may have changed during that sampling period, which may have influenced the nature and scale of constituent concentrations (e.g. well clean-ups, flow rate changes, chemical changes)
- verify that equipment is being operated and maintained as per basis of design and specification
- operating practices are being followed (such as *PW Treatment System Operating Manual* (Ref. 111) and *PW High OIW Content Procedure* (Ref. 110), and the controls are effective)

- reviewing chemical usage such as chemical types, dosing specifications versus sample concentrations, and pump calibrations.

Corrective action to address any findings will be taken as soon as practicable. Corrective actions can include:

- amendment to chemicals and/or dosing concentrations (see hazardous materials selection process, summarised in Section 9.3.1.3)
- changes to operational procedures
- maintenance and changes to maintenance schedules
- training.

Follow up monitoring (i.e. resampling) will be undertaken to confirm the effectiveness of implemented changes and that EQCs are being achieved.

If the Trigger Actions listed above still do not correct the trends, concentrations of contaminants of concern or WET testing continues to indicate an exceedance at the discharge boundary, then contingency actions will be triggered (Section 9.4.1.1.7).

9.4.1.1.7 Contingency actions

Contingency actions may include:

- additional tertiary treatment systems (e.g. a third filter bed, more frequent filter change-outs, change in type of filter media, change in treatment system) should TPH in the discharge continue to exceed forecasts and/or design specifications
- diffuser addition or caisson modification to change the dispersion characteristics, should hydrocarbons or metals concentrations exceed expected levels, flow rates change, or properties of the discharge exceed forecast physical characteristics e.g. density or temperature
- addition of removal beds or filtration for mercury or organics should mercury or organics content continue to exceed forecast concentrations
- design modifications to secondary treatment equipment or the process (e.g. use of supplemental packaged equipment, directing more PW through the tertiary treatment system, improved IGF, hydrocyclone technology), should the performance of the topsides water treatment facilities not meet design specifications, and/or improved technology is available.

Implementing any contingency actions will require detailed methodical planning, preparation, and documentation to ensure the effectiveness of the actions and to ensure that risks and impacts are ALARP. Being a new facility with no operating history, the investigation of platform modifications is highly dependent on the nature and scale of the exceedance and the practicality of the proposed modification. Therefore all proposed contingency action design changes will be assessed with respect to the nature and extent of the exceedance, the potential environmental impacts and risks associated with the exceedance, the technical performance of the current systems, the technical performance of additional control measures such as design modifications, and considering the principles of ALARP. The process will typically require input from various subject matter experts, such as operations personnel, process engineers, HSE personnel, and Management.

9.4.1.1.8 Changes to the monitoring framework

Changes to the monitoring framework may be initiated for a number of reasons, these include:

- In line with the *ABU Hazardous Materials Management Procedure* (Ref. 76), planned changes to production chemicals (either change of chemical or increased dosing rates) will be assessed and, if required, the topsides analysis suite will be reviewed to confirm (e.g. through consultation with the chemical supplier) that it is sufficient to monitor for the chemical (i.e. considering composition of production chemical).
- The selected topsides analytical suite may be reviewed and the frequency of monitoring specific analytes updated if PW composition changes or specific analytes become more (or less) applicable. The selected suite will be tailored to those analytes that are regularly identified and are providing the most informative data and may include markers or proxy tests such as microtox. The full suite (as shown in Table 9-14) will continue to be analysed at least annually.
- Surrogate WET will be undertaken quarterly to further validate the surrogate testing method as part of the WET testing program. In time, surrogate testing frequency may be reduced based on an evaluation of ecotoxicity data and trends, quarterly topsides analytical results, platform / discharge operational status, and in line with the principles of the adaptive management framework. Surrogate WET will remain at least annual (or on trigger) with multi-species WET at least 3-yearly (or on trigger).
- CAPL will continue to work with subject matter experts (such as CSIRO) to refine the ecotoxicity testing program and advances in testing may be integrated into future methodology.
- The frequency of laboratory samples (i.e. normally twice daily) may be reviewed and amended if at least six months' of data demonstrates the analyser is effective in managing discharge performance to meet water quality objectives. The frequency of laboratory samples will not be reduced to less than weekly.
- Research and development is being undertaken to support continuous improvement in environmental management approaches, including collaboration with university and industry bodies - with new technologies for topsides, analytical and field measurements in development. Should projects currently in early stages of the technology development lifecycle progress to implementation stage, and be shown to pose advantages (i.e. equivalent or better management outcomes) to current monitoring methods, approaches may be amended to reflect these advances. Refer to Section 9.4.1.3 for more information.

9.4.1.1.9 Well clean-up activities

This section describes the monitoring framework for platform discharges in Commonwealth waters during well clean-up campaigns. The framework ensures that adequate sampling to protect the environment, confirm discharges are in-line with those anticipated and inform future decisions is conducted for each specific campaign event.

During the planning phase of a well clean-up campaign a review of reservoir characteristics, proposed clean-up strategy, potential additional treatment options and chemicals, will be conducted to inform the topsides sampling program.

The main components of topsides monitoring program for well clean-ups are listed in Table 9-15; full details are included in the *Waste Water Discharges Management Plan* (Ref. 73).

Table 9-15: Well clean-up—topsides monitoring

Parameters	Frequency
Discharge volume	Normally continuous
TPH (platform laboratory analysis, typically using a Horiba or similar)	Normally four times every 24 hours, more frequently as required
Characterisation (samples collected on platform and analysed on Platform or at an onshore laboratory) for selected analytes as defined in the planning review (may include but not limited to): • metals (total and dissolved) • process Chemical markers • glycols (including MEG and TEG) • physical and chemical parameters.	Per campaign

Oil in water / TPH monitoring review

As described in Section 7.2.6, TPH is sampled and analysed offshore by the platform laboratory and trended by an analyser. Well clean-up campaigns are managed to achieve the performance standard of daily average 100 mg/L TPH and 30 mg/L monthly average:

- laboratory samples are assessed to track performance against Performance Standards, and initiate appropriate management response to manage and mitigate as required

Topsides monitoring review

As described in Section 7.2.6, a discharge zone boundary has been determined (850 m from the platform), at which constituent concentrations are expected to be at or below defined ANZG trigger levels (Ref. 20). Data from topsides monitoring will be reviewed once data is received, including:

- topside comparison against ANZG and other EQC forecast at the discharge zone boundary (i.e. [discharge value / dilution] < EQC).

If concentrations of constituents of concern exceed the EQC triggers at the discharge zone boundary, the risks and impacts will be further quantified, and the trigger/contingency action process implemented. Relevant data will also inform future well clean-up campaigns.

Trigger actions and contingency actions are described in Sections 9.4.1.1.6 and 9.4.1.1.7 respectively. Depending on the timing in receiving results, nature and scale of the exceedance, a number of trigger actions and corrective actions will be considered by environmental personnel, operators, and laboratory staff.

9.4.1.2 Platform air emissions monitoring program

Table 9-16 lists the main components of the platform air emissions monitoring program.

Emissions monitoring for key point source emissions located on the platform is undertaken through metered systems, employing integrated instrumentation such as gas chromatographs and flowmeters to measure and report data to the production allocation (energy components) system via PIMS. Data is reconciled in this system of record, with assurances and quality checks at daily, monthly, and annual intervals by the integrated production management (IPM) team. Quality assured production data is accessed by the HSE function for use in NGER, National Pollutant Inventory (NPI), and Chevron Corporate reporting where further quality

checks and assurance is performed in accordance with reporting obligations. This data along with other non-production records pertinent to emissions management, such as diesel consumption, vessel usage, and other inputs for calculated parameters (such as those required to calculate fugitive emissions from plant, equipment and produced water) are compiled, tracked and trended.

Further details of the platform emissions monitoring are included in the Wheatstone Platform Emissions and Energy Management Plan (EMMP) (Ref. 117), which accounts for all emissions sources from the platform.

Table 9-16: Platform air emissions monitoring program

Monitoring program	Frequency	Description	Review
Greenhouse Emissions (e.g. from flaring, fuel gas and diesel combustion and fugitive emissions)	Ongoing	Recording and reporting of emissions as required by the *National Greenhouse and Energy Reporting Act 2007* (Cth)	Tracking of compliance against limits established in line with the *National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015*
Criteria Pollutant Emissions (e.g. from flaring, fuel gas and diesel combustion and fugitive emissions)	Ongoing	Recording and reporting of emissions as required by the National Pollutant Inventory.	Annual review of criteria pollutants against NEPM standards.
Emissions and Energy Management Plan (EEMP)	Ongoing	Continuous monitoring and recording of emissions from key production sources.	Regular monitoring of performance against emissions performance standard.

State monitoring

Monitoring of emissions and discharges will include those listed in Table 9-17 to provide information for the quarterly report (Table 9-19). The data will be derived from estimations, typically based on the duration of the activity/release/discharge (e.g. using information such as fuel usage) and considering standard industry practices and other available data where relevant. Given the nature and scale of the petroleum activities, and the negligible and intermittent emissions and discharges associated with the activities, monitoring is not continuous, and is conducted on an as-needs basis to ensure data is available for the quarterly discharges report. Generally, equipment is not used to monitor these emissions and discharges.

Table 9-17: Monitoring requirements in State waters and/or onshore

Activity	Aspect	Parameter
IMR vessels in State waters	Planned discharges from vessels performing petroleum activities	Volumes of sewage and oily bilge water
	Air emissions from vessels performing petroleum activities	Volumes of air emissions
Field support activities in PL99 – vehicle usage	Air emissions from vehicles performing petroleum activities in PL99	Volumes of air emissions
IMR activities in PL99 – pigging	Air emissions from the onshore pig receiver	Volumes of air emissions
Field support and IMR activities	Waste generated from IMR activities	Volumes of waste

Activity	Aspect	Parameter
Field support and IMR activities	Spills in State waters and onshore in PL99	Volumes spilt

9.4.1.3 Alternative measurement approaches

Research and development is being undertaken to support continuous improvement in environmental management approaches, including collaboration with university and industry bodies - with new technologies for topsides, analytical and field measurements in development. Should projects currently in early stages of the technology development lifecycle progress to implementation stage, and be shown to pose advantages (i.e. equivalent or better management outcomes) to current monitoring methods, approaches may be amended to reflect these advances.

Current R&D includes projects which may improve sample gathering, analytical processing or in-field measurements. For example, remote sensing, autonomous vehicles and improved ecotoxicological testing.

Updates to management approaches from advances in technology will be subject to MOC in accordance with Section 9.3.2.2, and involve consultation with NOPSEMA as appropriate.

9.4.2 Incident reporting

Environmental incidents will be reported by CAPL in accordance with Table 9-18.

Table 9-18: Incident reporting

Recordable Incident reporting – Regulation 50 of OPGGS(E)R and Regulation 30 of PP(E)R	
Legislative definition of 'recordable incident': *'Recordable incident, for an activity, means a breach of an environmental performance objective or environmental performance standard, in the environment plan that applies to the activity, that is not a reportable incident'* Recordable incidents are breaches of the environmental performance outcomes and standards described in Section 5.7.	
Reporting requirements	**Report to / Timing**
Written notification to NOPSEMA by the 15th of each month As a minimum, the written incident report must describe: • the incidents and all material facts and circumstances concerning the incidents • any actions taken to avoid or mitigate any adverse environmental impacts • any corrective actions already taken, or that may be taken, to prevent a repeat of similar incidents. If no recordable incidents occur during the reporting month, a 'nil report' will be submitted.	Submit written report to NOPSEMA by the 15th of each month Submit written report to DMPE by the 15th of each month
Reportable Incident reporting – Regulations 47, 48, and 49 of OPGGS(E)R and Regulations 28, and 29 of PP(E)R	
Legislative definition of 'reportable incident':	

'Reportable incident, for an activity means an incident relating to an activity that has caused, or has the potential to cause an adverse environmental impact; and under the environmental risk assessment process the environmental impact is categorised as moderate or more serious than moderate.'

Therefore, reportable incidents under this EP are those events (not planned activities) that have a moderate or greater consequence (or risk) level. In accordance with this definition, the reportable incidents identified under this EP are:

- introduction of an IMP (Section 7.4.8)
- major defect emergency condition (Section 8.1).
- vessel collision emergency condition (Section 8.2).

Reporting requirements	Report to
Verbal or written notification must be undertaken within two hours of the incident or as soon as practicable. This information is required: • the incident and all material facts and circumstances known at the time • any actions taken to avoid or mitigate any adverse environmental impacts.	Report verbally to NOPSEMA within two hours or as soon as practicable and provide written record of notification by email. Phone: (08) 6461 7090 Email: submissions@nopsema.gov.au
	Report verbally or in writing to DMPE within two hours or as soon as practicable. Phone: (08) 9222 3727 Email: petroleum.environment@DMPE.wa.gov.au
Verbal notifications must be followed by a written report as soon as practicable, and not later than three days following the incident. At a minimum, the written incident report will include: • the incident and all material facts and circumstances • actions taken to avoid or mitigate any adverse environmental impacts • any corrective actions already taken, or that may be taken, to prevent a recurrence. If the initial notification of the reportable incident was verbal, this information must be included in the written report.	Written report to be provided to: • NOPSEMA: submissions@nopsema.gov.au • National Offshore Petroleum Titles Authority: info@nopta.gov.au • WA DMPE: petroleum.environment@DMPE.wa.gov.au

Additional Reporting Requirements

Reporting requirements	Report to
An oil/gas pollution incident that occurs within a marine park or is likely to impact on a marine park. The notification should include: • titleholder details • time and location of the incident (including name of marine park likely to be affected) • proposed response arrangements as per the OPEP (e.g. dispersant, containment, etc.) • confirmation of providing access to relevant monitoring and evaluation reports when available • contact details for the response coordinator.	DNP (24-hour) Marine Compliance Duty Officer Phone: 0419 293 465.

Death or injury to individual(s) from an EPBC Act Listed Species as a result of the petroleum activities	Report injury to or mortality of EPBC Act Listed Threatened or Migratory species within seven business days of observation to DAWE or equivalent: • Phone: +61 2 6274 1111 • Email: EPBC.Permits@environment.gov.au
Vessel collision with marine mammals (whales)	Reported as soon as practicable. https://data.marinemammals.gov.au/report/shipstrike
Presence of any suspected IMP or disease within 24 hours	DPIRD: • Email: biosecurity@fish.wa.gov.au • Phone: FishWatch 24-hour hotline: 1800 815 507
Unplanned release that is likely to impact land or water within Western Australian State jurisdiction	Reported as soon as practicable to DEMIRS. petroleum.environment@dmpe.wa.gov.au
	Report verbally to the DoT Maritime Environmental Emergency Response (MEER) Duty Officer within two hours, and also provide a follow-up email with a Pollution Report (POLREP) attached. Phone: 08 9480 9924 Email: marine.compliance@environment.gov.au.
	Reported within 24-hours to DPIRD: environment@dpird.wa.gov.au

9.4.3 Routine environmental reporting

Regulation 51 of the OPGGS(E)R and Regulation 16 of the PP(E)R requires environmental performance reporting for the activity described in this EP, as summarised in Table 9-19. Routine notifications required by Regulation 54 of the OPGGS(E)R and also included in Table 9-19.

Table 9-19: Routine external reporting requirements

Reporting requirement	Description	Reporting to	Timing
Environmental performance reporting (annual)	A report detailing environmental performance of the activity detailed in this EP	NOPSEMA submissions@nopsema.gov.au Phone: +61 8 6461 7090	Annually
	A report detailing environmental performance of the activity detailed in this EP as per the requirements of the *Guidelines for Preparing Petroleum Annual Environmental Reports (Ref. 194)*	DMPE Petroleum.environment@DMPE.wa.gov.au	Annually from commencement of activities
Emissions and discharge report	An emissions and discharges report will be submitted that summarises estimated emissions and discharges	DMPE Petroleum.environment@DMPE.wa.gov.au	Quarterly (within 15 days after the end of the reporting period)

Reporting requirement	Description	Reporting to	Timing
Discovery of certain UCH	In accordance with Section 40 of the UCH Act, CAPL must provide written notification setting out: • a description of the article • a description of the place where the article is situated that is sufficient to enable the article to be located.	Electronic form available via the Australasian Underwater Cultural Heritage Database: http://www.environment.gov.au/shipwreck/public/forms/notification.do;jsessionid=08546DC0F8BB76EEA72FCE054D9139F1?mode=add	Within 21 days of the discovery
Notification of start of activity	CAPL must complete Form FM1405 and submit to NOPSEMA 10 days before activity commencement	NOPSEMA submissions@nopsema.gov.au or: https://securefile.nopsema.gov.au/filedrop/submissions	Once prior to activity commencement
	CAPL must notify WA DMPE prior to commencement	DMPE Petroleum.environment@DMPE.wa.gov.au	Once prior to activity commencement
End of EP notification	CAPL must complete Form FM1405 and submit to NOPSEMA within 10 days of activity completion	NOPSEMA submissions@nopsema.gov.au or: https://securefile.nopsema.gov.au/filedrop/submissions	Once following completion of activity
	CAPL must notify WA DMPE within one week of the completion of the activity	DMPE Petroleum.environment@DMPE.wa.gov.au	Once following completion of activity

9.5 Environment Plan review

As required under Regulation 39 of the OPGGS(E)R, CAPL will submit a proposed revision of this EP to NOPSEMA and/or DMPE at least 14 days before the end of the five-year period since the EP was last accepted by the relevant regulator.

Regulation 23(1) of the PSLER and PPER requires an OSCP to be revised and submitted to DMPE at least 14 days before the end of the period of two years and six months from the most recent approval of the EP, or the day specified by DMPE under Regulation 20(2). CAPL will submit a proposed revision of the respective OPEP (Ref. 102) or OSCP (Section 9.3.8.8) to DMPE in accordance with the requirements of Regulation 23 of the PSLER and PPER.

An additional review of the EP and/or OPEP will be undertaken following:

- an emergency event
- the identification of additional response strategies to emergency events
- the identification of deficiencies within the EP or OPEP following the review of emergency response exercises or other activities.

CAPL is committed to continual improvement and adaptive management processes, and in recognition of the changing regulatory and scientific information related to GHG and carbon management, will annually review Australian regulatory and/or relevant international guidelines or standards, including:

- the periodic release of the Chevron Corporate's *Climate Change Resilience* report which considers corporate climate risk management with regard to established, contemporary climate science and/or carbon management guidance from intergovernmental bodies (e.g. UN IPCC, IEA)
- the release of new/revised policies or guidance from the Australian government
- the release of new/revised applicable guidelines or standards from international bodies (e.g. IMO) that have been adopted by the relevant authority (e.g. AMSA)
- the release of revised GHGMP for the Wheatstone LNG Plant
- the outcomes of CAPL emission reduction reviews and Chevron Corporate governance processes specific to the Wheatstone Project.

Where these annual reviews result in the identification of additional and/or revised control measures to ensure environmental impacts and risks are managed to ALARP, a review of this EP will be undertaken.

Additional revisions and/or resubmission of this EP to NOPSEMA, in accordance with Regulation 39 of the OPGGS(E)R or Regulation 18 of the PSLER and PPER, will be undertaken in accordance with the OEMS, and particularly the MoC process (Section 9.3.2.2).

10 acronyms and abbreviations

Table 10-1 defines the acronyms and abbreviations used in this document.

Table 10-1: Acronyms and abbreviations

Acronym/ Abbreviation	Definition
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABU	Australasian Business Unit
ACMA	Australian Communications and Media Authority
ACN	Australian Company Number
ADCP	Acoustic doppler current profiler
AEP	Australian Energy Producers
AHO	Australian Hydrographic Office
AIIMS	Australasian Inter-service Incident Management System
AIMS	Australian Institute of Marine Science
AIS	Automated Identification System
ALARP	As low as reasonably practicable
ALS	Formerly Australian Laboratory Services
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANSIA	Ashburton North Strategic Industrial Area
ANZG	Australian and New Zealand Governments
API	American Petroleum Institute
APPEA	Australian Petroleum Production and Exploration Association (now AEP)
AR6	Sixth Assessment Report (AR6) of the United Nations Intergovernmental Panel on Climate Change (IPCC)
ARC	AMSA Response Centre
ART	Advisory and Resource Team
AS/NZS	Australian Standard/New Zealand Standard
ASOG	Activity-specific operational guideline
ASTM	ASTM International (formerly the American Society for Testing and Materials)
ASV	Accommodation support vessel
AUV	Autonomous underwater vehicle
BAC	Balanggarra Aboriginal Corporation
BACI	Before-After-Control-Impact
BIA	Biologically important areas
BTAC	Buurabalayji Thalanyji Aboriginal Corporation
BTEX	Benzene, toluene, ethyl benzene, and xylene compounds
CALM Act	*Conservation and Land Management Act*

Acronym/ Abbreviation	Definition
CAMBA	China–Australia Migratory Bird Agreement
CAPL	Chevron Australia Pty Ltd
CAR	Containment and recovery
CCR	Central Control Room
CCTV	Closed-circuit television
CDU	Control Distribution Unit
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CH_4	Methane
CHARM	Chemical Hazard and Risk Management
CMMS	Computerised Maintenance Management System
CMS	Competency Management System
CMT	Crisis Management Team
CO	Carbon monoxide
CO_2	Carbon dioxide
COLREGS	Convention on the International Regulations for Preventing Collisions at Sea
CORMIX	Cornell Mixing Zone Expert System
CoW	Control of work
CP	Cathodic Protection
cP	Centipoise
CRT	Control Room Technician
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CW	Cooling Water
DAWE	Commonwealth Department of Agriculture, Water and the Environment (now DCCEEW)
DBCA	Western Australian Department of Biodiversity, Conservation and Attractions
DCCEEW	Commonwealth Department of Climate Change, Energy, Environment and Water
DEMIRS	Western Australian Department of Mines, Industry Regulation and Safety (now DMPE)
DMIRS	Western Australian Department of Mines, Industry Regulation and Safety (now DMPE)
DMP	Western Australian Department of Mines and Petroleum (now DMPE)
DMPE	Western Australian Department of Mines, Petroleum and Exploration
DNP	Director of National Parks
DoT	Western Australian Department of Transport
DotE	Commonwealth Department of the Environment (now DCCEEW)
DP	Dynamic positioning

Acronym/ Abbreviation	Definition
DPIRD	Western Australian Department of Primary Industries and Regional Development
DWER	Western Australian Department of Water and Environmental Regulation
EEMP	Emissions and Energy Management Plan
EEZ	Exclusive economic zone
EFL	Electrical flying leads
EGC	Environmental guideline criteria
EHU	Electro hydraulic umbilical
EIS	Environmental Impact Statement
EMBA	Environment that may be affected
EMMP	Emissions and Energy Management Plan
EMT	Emergency Management Team
EOFL	End of facility life
EOP	Emergency Operating Procedure
EP	Environment Plan
EP Act	Western Australian *Environmental Protection Act 1986*
EPA	Environmental Protection Authority
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EPO	Environmental Performance Outcome
EPRS	Emergency pipeline repair system
EQC	Environmental quality criteria
ERF	Effective radiative forcing
ERMP	Environmental Review and Management Programme
ERO	Emergency Response Organisation
ERP	Emergency Response Plan
ERT	Emergency Response Team
ESD	Ecologically sustainable development
FBR	Full bore rupture
FE	Facilities engineering
FEED	Front end engineering and design
FOSA	Field Operating Services Agreement
GHG	Greenhouse gas
GHGMP	Greenhouse Gas Management Plan
GMSL	Global mean seal level
GWL	Global warming levels
GWP	IPCC Global Warming Potential
HCTS	Habitat critical to the survival

Acronym/ Abbreviation	Definition
HFL	Hydraulic flying leads
HFO	Heavy fuel oil
HIRA	Hazard Identification and Risk Assessment
HP	High pressure
HSE	Health, safety, and environment
HVAC	Heating, ventilation and air conditioning
HWM	High water mark
IAPP	International Air Pollution Prevention
IBRA	Interim Biogeographic Regionalisation for Australia
IC	Incident Commander
ICS	Incident Command System
IEA	International Energy Agency
IEE	International Energy Efficiency
IEMT	Installation Emergency Management Team
IFO	Intermediate fuel oil
IGF	Induced Gas Flotation
IIR	Incident investigation and reporting
IM	Inspection and monitoring
IMCRA	Integrated Marine and Coastal Regionalisation of Australia
IMM	Inspection, monitoring, and maintenance
IMMR	Inspection, monitoring, maintenance, repair
IMO	International Maritime Organization
IMP	Introduced Marine Pest
IMR	Inspection, maintenance, and repair
IMS	Incident Management System
IOPP	International Oil Pollution Prevention
IP	Intelligent Pigging
IPCC	Intergovernmental Panel on Climate Change
IPIECA	International Petroleum Industry Environmental Conservation Association
IPM	Integrated production management
ISO	International Organization for Standardization
ISPP	International Sewage Pollution Prevention
ITOPF	International Tanker Owners Pollution Federation
IUCN	International Union for Conservation of Nature
JAMBA	Japan–Australia Migratory Bird Agreement
JDP	Julimar Development Project
JRCC	Joint Rescue Coordination Centre

Acronym/ Abbreviation	Definition
KEF	Key environmental feature
LAT	Lowest Astronomical Tide
LBL	Long baseline
LC_{50}	Concentration or dose found to be lethal in 50% of a group of test species
LDAR	Leak detection and repair
LGM	Last glacial maximum
LIMS	Laboratory Information Management System
LNG	Liquefied Natural Gas
LOC	Loss of containment
LOWC	Loss of well control
LP	Low pressure
LWM	Low water mark
MAC	Malgana Aboriginal Corporation
MACC	Marginal abatement cost curve
MAH	Mono-aromatic hydrocarbon
MARPOL	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. Also known as MARPOL 73/78.
MARS	Maritime Arrivals Reporting System
MBES	Multibeam Echo Sounders
MCH	Mardathoonera Cultural Heritage Pty Ltd
MDO	Marine diesel oil
MEER	Maritime Environmental Emergency Response
MEG	Monoethylene glycol
MEPC	Marine Environment Protection Committee
MES	Monitor, Evaluation, and Surveillance
MFO	Marine fauna observers
MGO	Marine gas oil
MHF	Major Hazard Facility
mm	millimetre
MMA	Marine Management Area
MNES	Matters of national environmental significance
MOC	Management of change
MODU	Mobile offshore drilling unit
MS	Ministerial Statement
MSC	Management system cycle
N/A	Not applicable
N_2O	Nitrous oxide
NAC	Nanda Aboriginal Corporation

Acronym/ Abbreviation	Definition
NATA	National Association of Testing Authorities
NDC	Nationally determined contribution
NEBA	Net Environmental Benefit Analysis
NEPM	National Environmental Protection Measures
NEPM AAQ	National Environmental Protection Measure for Ambient Air Quality
NERA	National Energy Resources Australia
NFR	Near field region
NGER Act	Commonwealth *National Greenhouse and Energy Reporting Act 2007*
NIS	Non-indigenous species
NMFS	United States National Marine Fisheries Service
NO_2	nitrogen dioxide
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NORMS	Naturally Occurring Radioactive Materials
NOPSEMA	National Offshore Petroleum Safety and Environment Management Authority
NPI	National Pollutant Inventory
NT	Northern Territory
NTGAC	Nganhurra Thanardi Garrbu Aboriginal Corporation
NWMR	North-west Marine Region
NWS	North West Shelf
NWSTF	North West Slope Trawl Fishery
NYFL	Ngarluma Yindjibarndi Foundation Ltd
O_3	Ozone
OA	Operational area
OC	On-Scene Commander
OCNS	Offshore Chemical Notification Scheme
OE	Operational Excellence
OEMS	Operational Excellence Management System
OGCI	Oil and Gas Climate Initiative
OGUK	Oil and Gas UK
OIM	Offshore Installation Manager
OIW	Oil in water
OMSP	Operational and Scientific Monitoring Plan
OPEP	Oil Pollution Emergency Plan
OPGGS Act	Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006*

Acronym/ Abbreviation	Definition
OPGGS(E)R	Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
ORT	On-site Response Team
OSC	Operations Section Chief
OSCP	Oil Spill Contingency Plan
OSMP	Operational and Scientific Monitoring Plan
OSPAR	Oslo and Paris Conventions for the Protection of the Marine Environment of the North-East Atlantic, 'OSPAR Convention'.
OSRL	Oil Spill Response Limited Centre
OSRO	Oil spill response organisations
OVIS	Offshore Vessel Information System
OWR	Oiled Wildlife Response
PAH	Polycyclic Aromatic Hydrocarbons
PAM	Passive acoustic monitoring
PARLOC	Pipeline and Riser Loss of Containment
PASM	Planning Area for Scientific Monitoring
PASS	Potential acid sulphate soils
PBC	Prescribed Bodies Corporate
PBW	Pygmy Blue Whale
PCI	Portfolio carbon intensity
PCPT	Piezo cone penetration test
PEMT	Perth Emergency Management Team
PFA	Pipeline flange adaptor
PGPA	Policy, Government and Public Affairs
PIMS	Production Information Management System
PLONOR	Poses Little or No Risk (to the Environment)
PM_{10}	Particulate matter <10 microns
$PM_{2.5}$	Particulate matter <2.5 microns
PMST	Protected Matters Search Tool
POB	People on Board
POLREP	Pollution Report
PP Act	Western Australian *Petroleum Pipelines Act 1969*
PPER	Western Australian Petroleum Pipelines (Environment) Regulations 2012
PPP	Protection Prioritisation Process
PSL Act	Western Australian *Petroleum (Submerged Lands) Act 1982*
PSLER	Western Australian Petroleum (Submerged Lands) (Environment) Regulations 2012
PSZ	Petroleum Safety Zone

Acronym/ Abbreviation	Definition
PTS	Permanent threshold shift
PTW	Permit to Work
PW	Produced Water
RAAF	Royal Australian Air Force
RBI	Risk-based Inspection
RESDV	Riser Emergency Shutdown Valve
RMS	Root mean square
RNTBC	Registered Native Title Body Corporate
RO	Reverse osmosis
ROKAMBA	Republic of Korea–Australia Migratory Bird Agreement
ROV	Remotely operated vehicle
ROW	Right Of Way
RRKAC	Robe River Kuruma Aboriginal Corporation
RRT	Regional Response Teams
RWT	Rhodamine WT
SCM	Subsea control module
SCSSV	Surface control subsurface safety valve
SDG	Sustainable Development Goal
SDS	Safety data sheet
SEEMP	Ship Energy Efficiency Management Plan
SEL	Sound Exposure Levels
SERIP	Surface Equipment Reliability and Integrity Process
SGS	Steel Gravity Structure
SHC	Shoreline clean-up
SIMAP	Three-dimensional oil spill model
SIMOPS	Simultaneous operations
SMPEP	Shipboard Marine Pollution Emergency Plan
SO_2	Sulfur dioxide
SOC	Security Operations Centre
SOPEP	Shipboard Oil Pollution Emergency Plan
SO_x	Sulphur oxides
SPD	Shoreline protection and deflection
SPL	Sound pressure level
SSIV	Subsea isolation valve
SSS	Side-scan sonar
STCW	Standards of Training Certification and Watch Keeping for Seafarers
TAPL	Texaco Australia Pty Ltd

Acronym/ Abbreviation	Definition
TEC	Threatened ecological communities
TEG	Tri-ethylene glycol
The Project	Wheatstone Liquefied Natural Gas Project
TPH	Total Petroleum Hydrocarbons
TRG	Tactical Response Guides
TTS	Temporary threshold Shift
UCH	Underwater Cultural Heritage
UCI	Upstream carbon intensity
UNFCCC	United Nations Framework Convention on Climate Change
USBL	Ultra-short Baseline
UT	Ultrasonic Testing
VMS	Vessel monitoring system
VOC	Volatile organic compounds
WA	Western Australia
WAC	Wirrawandi Aboriginal Corporation
WAFIC	Western Australian Fishing Industry Council
WET	Whole effluent toxicity
WHRU	Waste heat recovery units
WHS	Wheatstone
WOMP	Well Operations Management Plan
WQ	Water Quality
WWERT	Worldwide Emergency Response Team
XOM	Cross over manifold
YAC	Yinggarda Aboriginal Corporation

11 references

The following documentation is either directly referenced in this document or is a recommended source of background information.

Table 11-1: References

Ref. No.	Description	Document ID
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appendix a operational excellence—policy 530

policy 530

operational excellence: achieving world-class performance

It is the policy of Chevron Corporation to protect the safety and health of people and the environment, and to conduct our operations reliably and efficiently. The Operational Excellence Management System (OEMS) is the way Chevron systematically manages workforce safety and health, process safety, reliability and integrity, environment, efficiency, security, and stakeholder engagement and issues. OEMS puts into action our Chevron Way value of Protecting People and the Environment, which places the highest priority on the safety and health of our workforce and the protection of communities, the environment and our assets. Compliance with the law is a foundation for the OEMS.

Our OEMS is a risk-based system used to understand and mitigate risks and maintain and assure safeguards. OEMS consists of three parts:

leadership and OE culture

Leadership is the largest single factor for success in OE. Leaders are accountable not only for achieving results, but achieving them in the right way. Leaders must demonstrate consistent and rigorous application of OE to drive performance and meet OE objectives.

focus areas and OE expectations

Chevron manages risks to our employees, contractors, the communities where we operate, the environment and our assets through focus areas and OE expectations that guide the design, management and assurance of safeguards.

management system cycle

Chevron takes a systematic approach to set and align objectives; identify, prioritize and close gaps; strengthen safeguards and improve OE results.

We will assess and take steps to manage OE risks within the following framework of focus areas and OE expectations:

Workforce Safety and Health: We provide a safe and healthy workplace for our employees and contractors. Our highest priorities are to eliminate fatalities and prevent serious injuries and illnesses.

Process Safety, Reliability and Integrity: We manage the integrity of operating systems through design principles and engineering and operating practices to prevent and mitigate process safety incidents. We execute reliability programs so that equipment, components and systems perform their required functions across the full asset lifecycle.

Environment: We protect the environment through responsible design, development, operations and asset retirement.

Efficiency: We use energy and resources efficiently to continually improve and drive value.

Security: We protect personnel, facilities, information, systems, business operations and our reputation. We proactively identify security risks, develop personnel and sustainable programs to mitigate those risks, and continually evaluate the effectiveness of these efforts.

Stakeholders: We engage stakeholders to foster trust, build relationships, and promote two-way dialogue to manage potential impacts and create business opportunities. We work with our stakeholders in a socially responsible and ethical manner, consistent with our respect for human rights, to create a safer, more inclusive business environment. We also work with our partners to responsibly manage Chevron's non-operated joint venture partnerships and third-party aviation and marine activities.

There are specific OE expectations which need to be met under each focus area. Additional expectations apply to all focus areas and address legal, regulatory and OE compliance; risk management; assurance; competency; learning; human performance; technology; product stewardship; contractor OE management; incident investigation and reporting; and emergency management.

Through disciplined application of the OEMS, we integrate OE processes, standards, procedures and behaviours into our daily operations. While leaders are responsible for managing the OEMS and enabling OE performance, every individual in Chevron's workforce is accountable for complying with the principles of 'Do it safely or not at all' and 'There is always time to do it right'.

Line management has the primary responsibility for complying with this policy and applicable legal requirements within their respective functions and authority limits. Line management will communicate this policy to their respective employees and will establish policies, processes, programs and standards consistent with expectations of the OEMS.

Employees are responsible for understanding the risks that they manage and the safeguards that need to be in place to mitigate those risks. Employees are responsible for taking action consistent with all Company policies, and laws applicable to their assigned duties and responsibilities. Accordingly, employees who are unsure of the legal or regulatory implications of their actions are responsible for seeking management or supervisory guidance.



Mark Hatfield
Managing Director, Australasia Business Unit

the human energy company™

appendix b subsea inventory

The following table provides the status of subsea infrastructure associated with the Wheatstone Project (current as of November 2025).

Item	Petroleum title	Status	IM Plan	EP reference
Wheatstone & Iago Hydrocarbon System				
Wells				
WST-1A	WA-46-L	Operational	In place	Section 3.2.1.1
WST-1C	WA-46-L	Operational	In place	Section 3.2.1.1
WST-1D	WA-46-L	Operational	In place	Section 3.2.1.1
WST-3A-ST1	WA-47-L	Operational	In place	Section 3.2.1.1
WST-3C	WA-47-L	Operational	In place	Section 3.2.1.1
WST-3D	WA-47-L	Operational	In place	Section 3.2.1.1
WST-3F	WA-47-L	Operational	In place	Section 3.2.1.1
IAG-1B-ST1	WA-48-L	Operational	In place	Section 3.2.1.1
IAG-1E	WA-48-L	Operational	In place	Section 3.2.1.1
Manifolds				
WST-1 manifold	WA-46-L	Operational	In place	Section 3.2.1.3
WST-3 manifold	WA-47-L	Operational	In place	Section 3.2.1.3
IAG-1 manifold	WA-48-L	Operational	In place	Section 3.2.1.3
Pipeline termination structures				
End of line PTS (3)	WA-46-L, WA-47-L, and WA-48-L	Operational	In place	Section 3.2.1.2
Midline PTS (3)	WA-46-L, WA-47-L, and WA-48-L	Operational	In place	Section 3.2.1.2
Production pipelines, flowlines, and support infrastructure				
44” trunkline (1)	WA-25-PL	Operational	In place	Section 3.2.1.6
24” production flowlines (2)	WA-46-L, WA-47-L, and WA-48-L	Operational	In place	Section 3.2.1.2
6” MEG pipelines (2)	WA-46-L, WA-47-L, and WA-48-L	Operational	In place	Section 3.2.1.2
14” utility pipelines (2)	WA-46-L, WA-47-L, and WA-48-L	Operational	In place	Section 3.2.1.2
Electrohydraulic/chemical umbilicals (3)	WA-46-L, WA-47-L, and WA-48-L	Operational	In place	Section 3.2.1.4
Platform				
Platform topside—cellar deck, intermediate deck, upper deck	WA-48-L, and WA-3-IL	Operational	In place	Section 3.3
Topside structure and equipment—helideck (1), crane (2)	WA-48-L, and WA-3-IL	Operational	In place	Section 3.3
Foundations and steel gravity structures (4)	WA-48-L, and WA-3-IL	Operational	In place	Section 3.3
Risers—trunkline riser (1), MEG riser (2), production	WA-48-L, and WA-3-IL	Operational	In place	Section 3.3

Item	Petroleum title	Status	IM Plan	EP reference
flowline riser (2), utility flowline riser (2)				
Julimar Hydrocarbon System				
Wells				
BruA-1C	WA-49-L	Operational	In place	Section 3.2.1.1
BruA-1E	WA-49-L	Operational	In place	Section 3.2.1.1
BruA-1F	WA-49-L	Operational	In place	Section 3.2.1.1
BruA-1B	WA-49-L	Operational	In place	Section 3.2.1.1
BruA-1G	WA-49-L	Operational	In place	Section 3.2.1.1
JUA-1A	WA-49-L	Operational	In place	Section 3.2.1.1
JUA-1D	WA-49-L	Operational	In place	Section 3.2.1.1
JUA-1B	WA-49-L	Operational	In place	Section 3.2.1.1
JUA1E	WA-49-L	Not yet operational	In place	Section 3.2.1.1
JUB1A	WA-49-L	Not yet operational	In place	Section 3.2.1.1
JUB1B	WA-49-L	Not yet operational	In place	Section 3.2.1.1
Manifolds				
BruA manifold	WA-49-L	Operational	In place	Section 3.2.1.3
BruA Crossover manifold (BruA XOM)	WA-49-L	Operational	In place	Section 3.2.1.3
JULA manifold	WA-49-L	Operational	In place	Section 3.2.1.3
JULB manifold	WA-49-L	Operational	In place	Section 3.2.1.3
Inline T Assembly	WA-49-L	Operational	In place	Section 3.2.1.3
BruA manifold	WA-49-L	Operational	In place	Section 3.2.1.3
Production pipelines, flowlines, and support infrastructure				
22 km 18” Julimar/Brunello flowlines/pipeline (2)	WA-26-PL	Operational	In place	Section 3.2.1.2
22 km 18” JDP2 flowline (1)	WA-29-PL	Operational	In place	Section 3.2.1.2
~ 70m 8” JULB1A well to JULB1M manifold flexible flowline (1)	WA-35-PL	Operational	In place	Section 3.2.1.2
~4.35 km 8” JULB1B well to JULB1M manifold flexible flowline (1)	WA-36-PL	Operational	In place	Section 3.2.1.2
~2.5 km 10” JULB to ILT flexible flowline (1)	WA-34-PL	Operational	In place	Section 3.2.1.2
~2 km 8” J-85 (name TBA) to JULA manifold flexible flowline (1)	WA-26-PL	Operational	In place	Section 3.2.1.2
Horizontal spools and vertical jumpers and connectors	WA-49-L	Operational	In place	Section 3.2.1.2
Electrical, hydraulic and optical flying leads	WA-49-L	Operational	In place	Section 3.2.1.4

Item	Petroleum title	Status	IM Plan	EP reference
Electro-hydraulic umbilicals and associated structures including MEG Line.	WA-49-L	Operational	In place	Section 3.2.1.4

appendix c consultation materials

information sheet

wheatstone start-up and operations

(including julimar-brunello)



overview

Chevron Australia Pty Ltd (Chevron Australia), on behalf of the Wheatstone Project joint venture participants, operates the Wheatstone Project (Wheatstone) in northwest Western Australia.

Wheatstone is Australia's first natural gas 'hub' — with the capability for third parties to process gas through its facilities. To date, 80 percent of the gas processed through Wheatstone's two LNG trains has been supplied from the Chevron Australia-operated Wheatstone and Iago fields, and 20 percent has been supplied from the Woodside-owned Julimar and Brunello fields.

At the completion of an asset swap between Chevron Australia and Woodside, Woodside will transfer all of its interest in both the Wheatstone (13%) and Julimar-Brunello projects (65%) to Chevron Australia. The remaining 35% interest in Julimar-Brunello will be retained by KUFPEC.

During routine operations, hydrocarbons (gas and condensate) from the Wheatstone, Iago, Julimar and Brunello fields are gathered and transported to the Wheatstone Platform (the Platform) for initial processing. Gas and condensate are then transported via a 225-kilometre (km) trunkline to the onshore Wheatstone Gas Plant (the Gas Plant) for further processing. At the Gas Plant, gas and condensate are processed for export as liquefied natural gas (LNG) or piped to the mainland for WA domestic gas users.

Chevron Australia is currently revising the Wheatstone Start-Up and Operations Environment Plan (the revised EP) to reflect the ownership transfer of the Julimar-Brunello petroleum titles and incorporate the operation of the Julimar-Brunello field production system.

While the revised EP will address this change in ownership, there will be no change to the petroleum activities for Julimar-Brunello or Wheatstone projects.

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The revised EP will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment.

This information sheet is intended to assist 'relevant persons' to make an informed assessment of the environmental impact and risks of our activities and to provide input and feedback to enhance the revised EP, including control measures to manage environmental impacts and risks of the activity.

Relevant persons are those whose functions, interests or activities may be affected by our activities. This includes Traditional Owners and Custodians with a spiritual and cultural connection to Country, commercial and recreational fishing, tourism, individuals or groups in local communities.

We understand that Woodside has recently consulted with relevant persons on operations activities outlined in the in-force Julimar Operations Environment Plan. The revised EP will include a summary of the feedback (including objections or claims) previously provided by relevant persons as part of Woodside's consultation process.

Please note: in the context of an EP, each of the following is considered part of the 'environment':

- an ecosystem and their constituent parts, including people and communities
- natural and physical resources
- the qualities and characteristics of locations, places and areas
- the heritage value of places; and
- the social, economic and cultural features of the above.

location

The location of current Wheatstone infrastructure and activities is shown in Table 1 and Figure 1 and spans the following petroleum titles:

- Wheatstone Platform: infrastructure licence WA 3-IL
- Wheatstone field: production licences WA-46-L, WA-47-L and WA-48-L
- Iago field: production licences WA-46-L and WA-48-L
- Trunkline: pipeline licences WA-25-PL (Cwth) and TPL/25 (State).

The location of the Julimar-Brunello infrastructure and petroleum activities is shown in Table 1 and Figure 1 and spans the following petroleum titles;

- Julimar-Brunello fields: production licence WA-49-L and pipeline licences WA-26-PL, WA-29-PL, WA-34-PL, WA-35-PL and WA-36-PL.

The Operational Area (OA) in which the petroleum activities described in the revised EP will be undertaken includes:

- petroleum titles (WA-46-L, WA-47-L, WA-48-L, WA-49-L, WA-3-IL, WA-25-PL, TPL/25, PL 99)
- a 200 m wide corridor centred over the trunkline within Commonwealth and State waters.

The start-up and operations activities detailed in the current EP also span into WA State waters, and on the WA mainland. The revised EP covers activities within Commonwealth waters only. Therefore, activities occurring in WA State waters, and on the mainland have been excluded.

schedule and duration

The Wheatstone Platform and subsea field production system normally operate 24 hours a day, 365 days a year.

Chevron Australia is expected to take ownership of the Julimar-Brunello Project from mid-2026, (subject to various conditions including acceptance of the revised EP).

Wheatstone (inclusive of the Julimar-Brunello Project) is expected to operate for at least 25-30 years.

activity summary

The revised EP will incorporate the ongoing operation of the Julimar-Brunello Project. The routine operation of the Wheatstone and Julimar-Brunello field production systems will continue under the revised EP.

Primary activities will remain unchanged from the in-force Julimar-Brunello and Wheatstone EPs and include:

- Operation of the Wheatstone, Iago, Julimar-Brunello wells and subsea infrastructure, and associated activities.
- Production of hydrocarbon and other produced fluids from wells via infield flowlines and pipelines to the Platform.
- Ongoing operation of the Platform.
- Periodic inspection, maintenance and repair (IMR) of the hydrocarbon system, the Platform and associated subsea infrastructure.

safe navigation area and marine exclusion zone

The following infrastructure is subject to a 500 m radius petroleum safety exclusion zone:

- Wheatstone Platform
- WST-1 production manifold and wells
- WST-2 production manifold and wells
- WST-3 production manifold and wells
- IAG-1 production manifold and wells
- IAG-2 production manifold and wells

The following infrastructure is subject to a 250 m radius petroleum safety exclusion zone:

- JULA production manifold
- BRUA production manifold and cross over manifold

Approval will be sought for new petroleum safety zones for the infrastructure associated with the Julimar-Brunello Stage 3 Project (a petroleum activity being undertaken by Woodside prior to transfer of ownership of the Julimar-Brunello Project to Chevron Australia). At this stage the size of the petroleum safety exclusion zone is unknown.

No other exclusion zones will be sought for the subsea infrastructure.

environment that may be affected (EMBA)

As part of our environmental assessment and consultation process, Chevron Australia creates an EMBA map to provide geographical context for stakeholders to determine if their functions, interests or activities may be affected by an offshore activity during operations or in an emergency scenario. There is no change to the existing EMBA due to the ownership transfer of the Julimar-Brunello Project.

Figure 1 shows the EMBA, which is based on a worst-case environmental scenario, which in this case is an unplanned release (oil spill) resulting from a major defect in a flowline or trunkline.

The EMBA has been defined through combining multiple simulations for the unplanned release scenario under different weather and ocean conditions. This means that in the highly unlikely event an unplanned release does occur, a geographical area much smaller than the EMBA would be affected.

The majority of the impacts or risks directly arising from planned activities would occur within close proximity of the OA.

Chevron Australia has systematic control measures to prevent and mitigate emergencies and to reduce the impact of planned activities on the environment, including ecological, social and cultural sensitivities.

Table 2 summarises the key impacts or risks and proposed control measures to manage these to levels that are as low as reasonably practicable (ALARP) and acceptable.

cultural values

Chevron Australia acknowledges that Traditional Owners and Custodians in the northwest region of WA have expressed a cultural and spiritual connection to Sea Country. This encompasses an obligation to protect cultural values and features — including songlines, dreaming stories, and the flora and fauna connected to them.

We are committed to ongoing engagement and consultation with relevant groups to protect these cultural values (tangible and intangible). This process will continue to inform our understanding and help facilitate the co-design of appropriate controls to avoid impacts.

Chevron Australia's Cultural Heritage Management System (CHMS) sets out processes and procedures to manage risks to cultural heritage, and Chevron Australia's obligations under relevant legislation including the *Aboriginal Heritage Act 1972* (WA) and the *Underwater Cultural Heritage Act 2018* (Commonwealth).

The CHMS includes governance of field surveys and monitoring, spatial data, compliance and assurance, heritage assessment, inadvertent discovery procedures, incident management, training and induction materials.

approvals process

Petroleum activities in Commonwealth waters are regulated by NOPSEMA. Before petroleum activities can take place, Chevron Australia must develop an EP which will be assessed by NOPSEMA in accordance with the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (the Regulations).

The Regulations require us to consult with relevant persons whose functions, interests and activities may be affected by the petroleum activity.

Following consultation, we will submit to NOPSEMA the revised EP, which will:

- describe the environment in which activities are planned to take place;

- include an assessment of environmental impacts and risks arising from the activities;
- identify control measures to manage the potential impacts and risks to levels that are ALARP and acceptable; and
- outline how Chevron Australia has engaged with relevant persons and how their feedback has been considered and addressed.

NOPSEMA will assess whether the revised EP satisfies the Regulations, including whether the environmental impacts and risks of the activity will be managed so that they are ALARP and acceptable before accepting the EP.

your input

We are now seeking your feedback and input if you consider your functions, interests, or activities may be affected based on the information provided, including the summary of the key environmental impacts and risks identified to date in Table 2.

We encourage you to provide additional details about the environment, aspects, consequences of the activity or control measures or to ask for further information or consultation by 16 October 2025.

You can contact us with any questions, requests for information, or feedback at:

- 1800 225 195
- australia.chevron.com/feedback
- or scan the QR code

To subscribe to Chevron Australia consultation email or text message updates relating to our proposed activities, please visit go.chevron.com/subscriptions

Relevant persons may request that the information they provide be treated as confidential. Chevron Australia will make this known to NOPSEMA and it will be identified as sensitive information and not published in the revised EP.

what's next?

The feedback we receive during consultation will be used to inform and enhance the revised EP before it is submitted to NOPSEMA for assessment.

We commit to keeping you informed and providing responses to any relevant person who so requests.

privacy notice

If you choose to provide feedback, Chevron Australia will collect your name and contact details, for the purposes of maintaining contact with you and including your feedback in our submission to NOPSEMA. Provision of this information is purely voluntary, however if you choose not to provide it, we may not be able to contact you in the future. Chevron may transfer your information to NOPSEMA if required and, if you do not identify it as sensitive, to other Chevron affiliates including our head office in the United States. For further information regarding how we protect your personal information, and your rights, please refer to our privacy notice at australia.chevron.com/privacy

Table 1: Wheatstone Project key infrastructure (including additional Julimar-Brunello infrastructure).

Infrastructure	Details	Latitude South	Longitude East	Approximate water depth (~m)
Wheatstone-Iago infrastructure				
Wheatstone Platform	A 225 m tall gas processing platform which includes separation and cooling equipment. compression facilities, dehydration equipment, export facilities to tie-in to trunkline, living quarters, waste treatment, power generation and safety control systems.	19°55'45.78" S	115°23'02.22" E	71 m
Production wells and subsea production manifolds	Each well includes a subsea tree structure connected to a central manifold structure in each drill centre. The Wheatstone and Iago subsea production system includes:	Refer to Figure 2 for location		118–280 m
	• WST-1 drill centre – 3 x production wells and one manifold	19°54'21.20" S	115°16'06.69" E	
	• WST-3 drill centre - 4 x production wells and one manifold	19°56'42.81" S	115°19'29.53" E	
	• IAG-1 drill centre - 2 x production wells and one manifold	19°48'40.34" S	115°17'43.33" E	
Flowline and pipeline system	Each group of wells is connected to the Platform by flowlines and pipeline system. This system transports production fluids, monoethylene glycol (MEG) or other chemicals (e.g. scale inhibitor) and includes:	Refer to Figure 2 for location		70-280 m
	• 2 x 24" production flowlines			
	• 2 x 14" utility flowlines			
	• 2 x 6" MEG flowlines			
	• In-line tees, pipeline end terminals, and pipeline termination structures			
Umbilicals	Umbilicals run parallel to the flowlines and pipeline system and provide electrical power and hydraulic fluids to operate and control the manifolds and trees.	Refer to Figure 2 for location		
Trunkline	The trunkline transports commingled dry gas and condensate from the Wheatstone Platform to the onshore facility. The trunkline is 225 km long and 44 inches in diameter.	Refer to Figure 2 for location		
Julimar-Brunello infrastructure				
Production wells and subsea production manifolds	JULA drill centre includes: • 5 x production wells • 1 x manifold • 1 x FLET • 1 x UTA • 1 x ~8" flexible flowline connecting J-85 well to JULA manifold	20° 08 '52.917" S	115°02 '27.23" E	174 m
	JULB drill centre includes: • 2 x production wells	20° 06' 26.41"S	115° 03' 24.02"E	192 m

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	• 1 x manifold • 3 x UTAs • Subsea Control Module • Control Distribution Unit • 1 x 10” flexible flowline connecting JULB manifold to Inline T Assembly. • 1 x 8” flexible flowline connecting JULB1B well to JULB1M manifold			
	BRUA drill centre includes: • 5 x production wells • BRUA Crossover manifold which co-mingles reservoir fluids produced from the Brunello and Julimar fields	20°01’49.0788” S	115°12’06.8670” E	149 m
Julimar-Brunello flowlines	Each group of wells is connected to the Platform by the BRUA cross over manifold including: • 2 x 18” Production flowlines. • 1 x 4” MEG flowline	Refer to Figure 2 for location		71 – 148 m
Umbilicals	Umbilicals provide hydraulic and electric power, communications and chemical supplies between the Platform and subsea components.	Refer to Figure 2 for location		145 - 174 m

Table 2: Summary of key potential impacts and risks and key proposed control measures for operational activities[1].
Note: there are no new environmental risks or impacts arising from the change in ownership of the Julimar-Brunello Project.

aspect	potential interaction (impacts/risks)	proposed control measures
Cultural heritage *Note: other aspects identified in this table may have potential impacts or pose risks to cultural heritage.*	• Potential impacts to tangible underwater cultural heritage (UCH) such as physical sites, structures, artifacts and/or intangible cultural values, such as songlines, dreaming stories and culturally important marine fauna, during offshore activities.	• Offshore marine personnel will undertake an induction, including cultural heritage information and procedures. • In accordance with the Chevron Australia Inadvertent Aboriginal Underwater Cultural Heritage Discovery Procedure, if any suspected UCH material is found, work is stopped, relevant parties notified, and appropriate management actions implemented. *Control measures related to marine fauna and other cultural values and features are outlined in sections below.*
Planned impacts		
Physical presence of: • **hydrocarbon system** • **the Platform** • **subsea IMR activities** • **vessel operations**	• Presence of subsea infrastructure, Wheatstone Platform and vessels within the OA has the potential to interact and disrupt commercial shipping, fishing vessels and marine fauna. • Potential interaction with fishing vessels may result in entanglement of trawl fishing gear on subsea infrastructure.	• Platform navigation equipment to monitor maritime traffic movements. • Where required, marine safety information to be issued via AUSCOAST and/or Notice to Mariners prior to commencing offshore IMR activities • Vessels will meet crew competency, navigation equipment and radar requirements as per the Chevron Corporation Marine Standard. • In accordance with EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with Cetaceans, vessels will implement caution and no approach zones, where practicable. • Where required, a simultaneous operation plan will be developed and implemented to manage vessel activities.
Underwater sound from: • **start-up and operation of the Platform** • **IMR activities (e.g. acoustic surveys)** • **vessel and helicopter operations**	• Operations within the OA may result in a localised and temporary increase to ambient underwater sound levels. • A change in ambient sound may result in temporary and localised behavioural disturbance to marine fauna.	• In accordance with EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with Cetaceans, vessels will implement caution and no approach zones, and interaction management action.

[1] Proposed control measures are subject to change through consultation with relevant persons and the subsequent NOPSEMA assessment process.

Seabed disturbance from: • **subsea IMR activities** • **vessel operations**	• Seabed disturbance from IMR activities and vessel anchoring (contingency) may result in the alteration of marine habitat and a localised and temporary change in water quality.	• IMR activities undertaken in accordance with the relevant Inspection and Monitoring Plan. • Hazard Identification and Risk Assessment (HIRA) undertaken to identify and assess potential environmental impacts and risks associated with proposed IMR activities. • Activity specific work procedures developed as required, including additional controls identified (if required). • Vessels will meet crew competency, navigation equipment and radar requirements of the Chevron Corporation Marine Standard.
Light emissions from: • **the Platform** • **vessel operations**	• Navigational and operational lighting from the Platform and vessels during IMR activities may result in a localised change in ambient light. • A change in ambient light may result in the temporary attraction of light-sensitive species.	• Vessels will meet lighting requirements of the Chevron Corporation Marine Standard. • Where practicable, IMR activities scheduled to avoid critical habitat within turtle nesting season. • HIRA undertaken prior to vessels working at night within critical habitat during turtle nesting season.
Atmospheric and Greenhouse gas (GHG) emissions from: • **hydrocarbon system** • **the Platform** • **subsea IMR activities** • **vessel operations**	• Combustion of fuel from the Platform, vessels and helicopters operations and flaring may result in a localised and temporary reduction in air quality. • GHG emissions may result in contribution to the reduction of the global atmospheric carbon budget.	• Reduced sulphur content fuel will be used when available. • Vessels will comply with the requirements of Marine Order 97 (MARPOL 73/78 Annex VI) in relation to air pollution. • Maintenance regime in place for the Platform. Compliance with GHG emissions reduction targets outlined in any applicable in-force legislation of approval conditions (e.g. Federal Government's Safeguard Mechanism and the National Greenhouse and Energy Reporting requirements). • For a full list of control measures, refer to the current NOPSEMA accepted revision of the Wheatstone Start-Up and Operations EP.

Planned discharges (e.g. control fluids, sewage, greywater, food wastes) from: • **start-up and operations of the hydrocarbon system** • **start-up and operation of the Platform** • **subsea IMR activities** • **vessel operations**	• Planned discharges may result in a localised and temporary reduction in water quality.	• Hazardous materials will be selected and managed in accordance with the Chevron Australia Hazardous Materials Management Procedure. • HIRA undertaken prior to maintenance and repair activities. • Activity specific work procedures developed to address HIRA findings, including implementing additional controls (if required). • Vessels will comply with the requirements of Marine Order 96 (MARPOL 73/78 Annex IV) in relation to sewage discharge. • Vessels will comply with the requirements of Marine Order 95 (MARPOL 73/78 Annex V) in relation to food waste discharge. • Vessels will comply with the requirements of Marine Order 91 (MARPOL 73/78 Annex I) in relation to oily bilge water discharges.
Planned discharge of produced water from: • **the Platform**	• Planned discharges from the Platform produced water treatment system may result in a localised and temporary reduction in water and sediment quality.	• Hazardous materials will be selected and managed in accordance with the Chevron Australia Hazardous Materials Management Procedure. • Produced water total petroleum hydrocarbons (TPH) concentrations monitored during routine operations and well clean-up campaigns.
unplanned events (accidents/incidents)		
Invasive marine pests	• Planned discharge of ballast water or the presence of biofouling on IMR vessels may result in the introduction of an invasive marine pest.	• Vessels will meet the requirements of the Chevron Australia Quarantine Management Procedure for Marine Vessels. • Ballast water exchanges will be managed in accordance with the Australian Ballast Water Management Requirements. • Vessels greater than 400 gross tonnes with an antifoul coating are to maintain an up-to-date international antifouling coating certification in accordance with the Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 and/or relevant codes and standards. • Where required, vessel pre-arrival information will be reported through the Maritime Arrivals Reporting System as per the Commonwealth Biosecurity Act 2015.

Unplanned discharge of waste from: • **start-up and operations of the Platform** • **vessel operations**	• Unplanned release of hazardous or non-hazardous material may result in marine pollution resulting in entanglement or injury of marine fauna.	• Vessels will comply with the requirements of Marine Order 95 (MARPOL 73/78 Annex V) in relation to managing waste (garbage) offshore.
Unplanned release (of production fluids and other fluids e.g. diesel, MEG, TEG, hydraulic fluids, chemicals, or waste) during start-up and operations of the Platform from corrosion, mechanical failure/damage, human error or fire/explosion	• Unplanned release may result in indirect impacts to the marine environment and fauna arising from chemical toxicity.	• Platform radar, navigational lighting and audio navigational equipment is maintained. • Lifting procedure in place that complies with the requirements of the Chevron Australia Managing Safe Work Process. • Inspection, maintenance and monitoring of the platform and hydrocarbon system to maintain integrity will be undertaken in accordance with the relevant Inspection and Monitoring Plan. • Where required, a simultaneous operation plan will be developed and implemented to manage operations and maintenance activities. **Spill response** • Emergency response will be implemented in accordance with the arrangements and strategies detailed in the Chevron Australia Oil Pollution Emergency Plan (OPEP). • Where required, operational and scientific monitoring will be undertaken in line with the Chevron Australia Operational and Scientific Monitoring Plan (OSMP).
Unplanned release (of fluids e.g. condensate, control fluids or MEG) during start-up and operations of the hydrocarbon system (flowlines, trunkline or subsea valves) from corrosion or mechanical failure/damage	• Unplanned release may result in indirect impacts to the marine environment and fauna arising from chemical toxicity.	• Inspection, maintenance and monitoring of the hydrocarbon system to maintain integrity will be undertaken in accordance with the relevant Inspection and Monitoring Plan. **Spill response** • Emergency response will be implemented in accordance with the arrangements and strategies detailed in the Chevron Australia Oil Pollution Emergency Plan (OPEP). • Where required, operational and scientific monitoring will be undertaken in line with the Chevron Australia Operational and Scientific Monitoring Plan (OSMP).

Unplanned release (of fluids e.g. hydraulic fluid, marine fuel, diesel) during subsea IMR operations or vessel operations from mechanical failure/damage or human error	• Unplanned release may result in indirect impacts to the marine environment and fauna arising from chemical toxicity.	• Vessels will comply with the requirements of Marine Order 91 (MARPOL 73/78 Annex I) in relation to having an approved Ship Oil Pollution Emergency Plan in place. • Vessels will meet the requirements of the Chevron Corporation Marine Standard, including the pre-mobilisation inspections of equipment, couplings and secondary containment availability and refuelling/bunkering process.
emergency events		
Unplanned release of hydrocarbons (oil spill) from a vessel collision during IMR operations	• Unplanned release of hydrocarbons may result in marine pollution, smothering of subtidal and intertidal habitats, indirect impacts to fisheries, and reduction in amenity.	• Vessels will meet the crew competency, navigation equipment, and radar requirements of the Chevron Corporation Marine Standard. • Marine safety information to be issued via AUSCOAST and/or Notice to Mariners (where required) prior to commencing the activity. **Spill response** • Vessels will comply with the requirements of Marine Order 91 (MARPOL 73/78 Annex I) in relation to having an approved Ship Oil Pollution Emergency Plan in place. • Emergency response will be implemented in accordance with the arrangements and strategies detailed in the Chevron Australia Oil Pollution Emergency Plan (OPEP). • Where required, operational and scientific monitoring will be undertaken in line with the Chevron Australia Operational and Scientific Monitoring Plan (OSMP).
Unplanned release of condensate during operation of the hydrocarbon system from major defect in flowline or production pipeline	• Unplanned release of hydrocarbons may result in marine pollution, shoreline impacts of subtidal and intertidal habitats, indirect impacts to fisheries, and a reduction in amenity.	• Inspection, maintenance and monitoring of the hydrocarbon system to maintain integrity will be undertaken in accordance with the relevant Inspection and Monitoring Plan. **Spill response** • Emergency response will be implemented in accordance with the arrangements and strategies detailed in the Chevron Australia Oil Pollution Emergency Plan (OPEP).

		• Where required, operational and scientific monitoring will be undertaken in line with the Chevron Australia Operational and Scientific Monitoring Plan (OSMP).
emergency response		
Ground disturbance – shoreline spill response	• In the event of an oil spill which impacts the shoreline, implementing shoreline clean-up techniques will involve people and equipment, which may disturb shoreline habitat with subsequent impacts to fauna.	• Where required, operational and scientific monitoring will be undertaken in accordance with the Chevron Australia OSMP.
Physical presence—oiled wildlife response	• In the event of an oil spill which impacts fauna, the handling and treating of marine fauna will result in personnel interacting with marine fauna.	• Where required, operational and scientific monitoring will be undertaken in accordance with the Chevron Australia OSMP.

Figure 1: Environment that may be affected (EMBA) map.

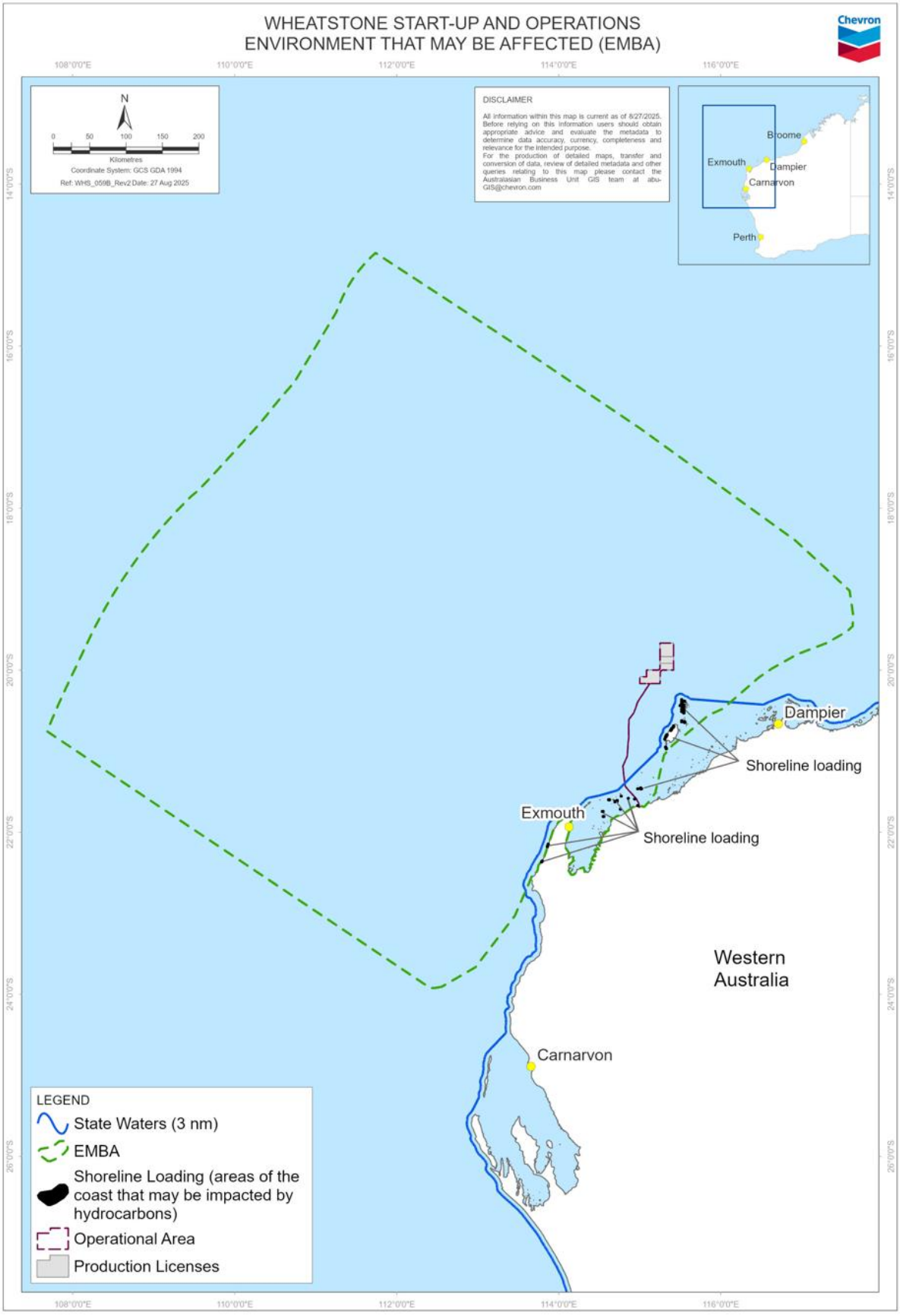
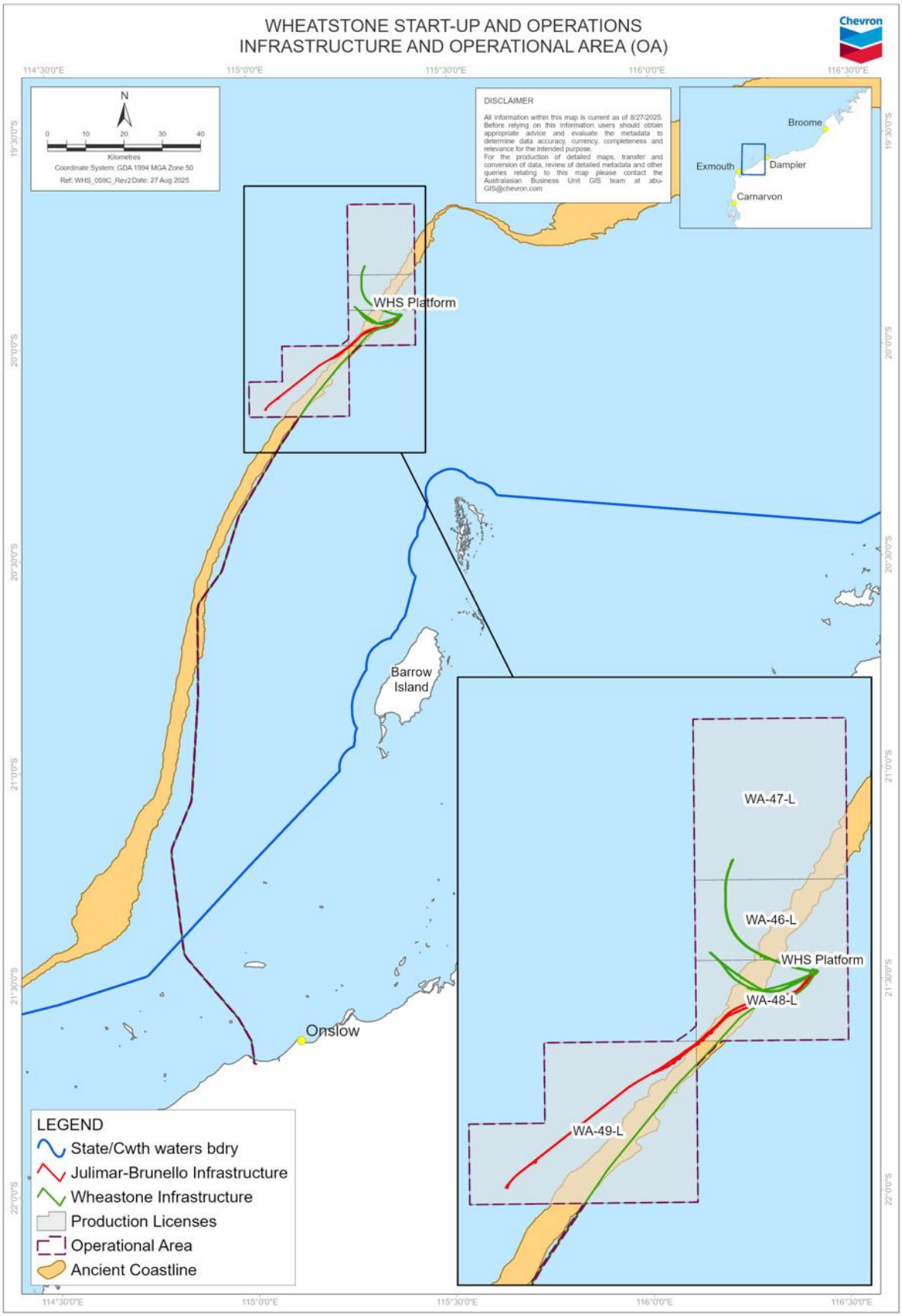


Figure 2: Wheatstone start-up and operations infrastructure location and operational area (OA).



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environment plan

seeking relevant persons' input

Chevron has been operating in Australia for more than 70 years – creating enduring benefits and delivering reliable, affordable energy. We welcome feedback to enhance our environmental management measures as we progress offshore activities to support the ongoing supply of natural gas to Western Australia and the Asia Pacific region.

our activities

Chevron Australia, on behalf of the Wheatstone Project joint venture participants, operates the Wheatstone Project in Western Australia. Wheatstone is Australia's first natural gas 'hub' – with capability for third parties to process gas through its facilities.

To date, Wheatstone's two LNG trains have been supplied with gas from the Chevron Australia-operated Wheatstone and Iago fields, as well as gas from the Woodside-owned Julimar and Brunello fields. At the completion of an asset swap between Chevron Australia and Woodside, Woodside will transfer all of its interest in the Julimar-Brunello Project (65%) to Chevron Australia. We are now revising our Wheatstone Start-Up and Operations Environment Plan (the revised EP) to incorporate the Julimar-Brunello field production system.

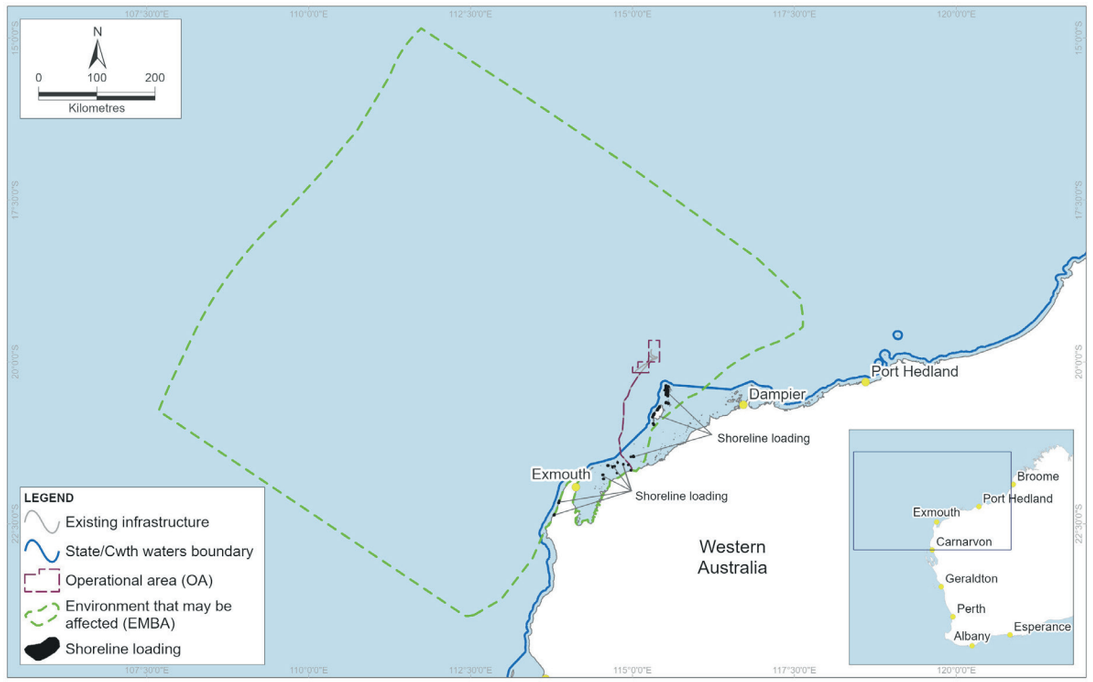
The feedback we receive during consultation will inform and enhance the revised EP, which will be assessed by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

environment that may be affected (EMBA)

As part of our environmental assessment and consultation process, Chevron Australia creates an EMBA map to provide geographical context for stakeholders to determine if their functions, interests or activities may be affected by an offshore activity during operations or in an emergency scenario.

The map shows the operational area (OA) and the EMBA, which is based on a worst-case environmental scenario, which in this case is an unplanned release (oil spill) resulting from a major defect in a flowline or trunkline.

The EMBA has been defined through combining multiple simulations for the unplanned release scenario under different weather and ocean conditions. This means that in the highly unlikely event an unplanned release does occur, a geographical area much smaller than the EMBA would be affected.



The majority of the impacts or risks directly arising from planned activities would occur within close proximity of the OA. Chevron Australia has systematic control measures to prevent and mitigate emergencies and to reduce the impact of planned activities on the environment, including ecological, social and cultural sensitivities.

we want to hear from you

We are now seeking feedback and input if you consider your functions, interests, or activities may be affected. This may include Traditional Owners and Custodians with a spiritual and cultural connection to land and sea Country, local community members, and those involved in commercial or recreational fishing and tourism.

Please contact us by **16 October 2025** to be included in consultations. Visit **australia.chevron.com/feedback**, call tollfree on **1800 225 195** or scan the **QR code** for more information.

September 2025

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CHEVRON
WHEATSTONE JULIMAR EP

Tearsheets



Tearsheets / Chevron Wheatstone Julimar EP

THE WEST AUSTRALIAN

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Fatal crash in Wheatbelt

A 49-year-old man was killed in the Wheatbelt when his car ran off the road and hit a tree.

Police said the white Holden Commodore sedan was travelling east on Great Eastern Highway, in Clackline — about 15km south-west of Northam — when it left the road and hit a tree about 11am on Sunday.

The driver, who was the only person in the car, suffered life-threatening injuries and died at the scene.

Major crash investigators were examining the scene on Sunday.

Crush death at airport

An air freight employee has died at Sydney's Kingsford Smith Airport after he was crushed by a vehicle.

The worker, believed to be in his 40s, was hit at the freight handling terminal of the International airport about 10.30am on Sunday, NSW Police said.

Specialist paramedics were called but the man was unable to be revived and died at the scene.

NSW Police established a crime scene that was examined by specialist police, though the incident is not being treated as suspicious.

SUMMER BRINGS A BURNING QUESTION

Health fears over bombshell testing of much-loved sunscreens

DUNCAN EVANS & OLIVER LANE

As WA steps into spring and the summer sun creeps over the horizon, a bombshell report on much-trusted sunscreens has beachgoers scrambling.

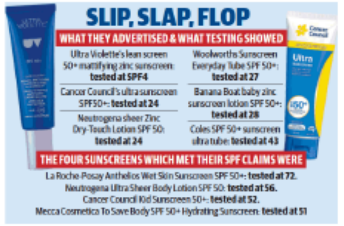
High-profile and much-loved brands have been pulled from shelves amid a dramatic failure in testing and advertising.

Consumer advocacy group Choice first revealed the breakdown in a shock report in June, suggesting sunscreen brands were failing to meet their advertised SPF 50+ claims.

For Perth's Boston Shield that report showed a lack of care from some of Australia's biggest brands. "Given Australian standards, I thought it gets pretty regulated . . . it's pretty surprising because don't we have the highest melanoma rates?" he said.

"You would think that those brands would care for us, but they don't."

Mr Shield, an avid beachgoer, isn't alone in his concerns.



A national investigation is now probing the transparency of product testing, amid heightened fears we no longer know the best way to keep our skin safe. So, what should Aussies do now as we suddenly have doubts about how to slip, slop and slap?

WHAT HAPPENED?

In June, Choice delivered a report claiming it had tested 20 popular SPF50 and SPF50+ sunscreens and found 16 fell short of the level of protection they advertised.

The consumer group tested the products with experts in an accredited sunscreen lab, with four products returning SPF results in the 60s, four in the 30s, and seven in the 20s.

Brands tested included Banana Boat, Cancer Council and Bondi Sands sunscreens.

In one example, the Banana Boat baby zinc sunscreen lotion SPF 50+ tested at 28, while the Coles SPF 50+ sunscreen ultra tube tested at 43.

Cancer Council's ultra sunscreen SPF50+ tested at 24.

Ultra Violette's lean screen 50+ mattifying zinc sunscreen was tested and returned a result of just SPF4.

WHAT IS SPF?

SPF stands for "sun protection factor" and is the measure of how well the sunscreen protects a user from the sun's UV rays.

An SPF 50 sunscreen is meant to block about 98 per cent of the rays, meaning it will take 50 times longer to get burnt than with unprotected skin.

HOW HAVE BRANDS RESPONDED?

In June, Ultra Violette initially disputed Choice's findings.

"Given our commitment to

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PILBARA NEWS

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MURALS A GIFT TO SAFE

MADELIN HAYES

SAFE Karratha's headquarters have received a vibrant makeover, thanks to the generosity of WA mural artist Lawry Halden.

Mr Halden, a long-time animal lover, has included SAFE in his will and recently donated two murals to the organisation while visiting the Pilbara for the Cossack Art Awards.

"Lawry's a big animal lover and has kindly left SAFE a bequest," SAFE founder Sue Hedley said.

"While he was in the region painting for the awards, he offered to gift us a mural. We discussed the design, wanting something that captured the heart of our work... and cats and dogs are the main animals we re-home, so we wanted that as the major focus."

The result is a large, colourful mural featuring a cat and dog, centred around a welcoming house with an open door. Native desert pea flowers and other local elements were also included to reflect the Pilbara landscape.

"He did a fabulous job," Ms Hedley said. "The open door symbolises the welcoming home we strive to provide for animals in need."

Although only one mural was originally planned, Mr Halden later returned with leftover paint and created a second artwork in the backyard.



Finches commonly found around SAFE's backyard. Picture: Madelin Hayes

City mulls over sale of Quarter HQ

MADELIN HAYES

The City of Karratha is weighing up the future of one of its most prominent investments, The Quarter HQ, after a recent valuation placed the property at $87 million — nearly double its purchase price.

Originally a $58m LandCorp-Mirvac development, built by Doric Group, that aimed to revitalise Karratha's city centre, The Quarter was officially opened in 2016 and then purchased by the city in 2017 for $30m.

The development has delivered a 9 per cent annual return on investment, but city officials are now preparing a business case to assess the potential benefits of a sale of the location.

Built on the site of the former aquatic centre at the top of Sharpe Avenue, The Quarter was designed to mimic a European city square featuring a four-storey retail and commercial building, a four-level car park and two three-storey residential buildings with 46 apartments.

The ground-level cafes, restaurants and shops surrounding the square were designed to create a sense of activity and connection between the offices and apartments and the outdoor areas, which have water features, artwork and shade structures inspired by Indigenous culture.

Karratha mayor Daniel Scott said the development of a business plan would now explore how the investment was tracking after eight years.

"Our investment in The Quarter HQ has provided revenue that has been used to support the general operations of the city," he said.

"However, based on the latest property valuation, there is an opportunity for council to explore selling the property. This would allow the city to reinvest the revenue into our strategic reserves, reducing the amount of ratepayer revenue needed to maintain and develop our community infrastructure."

The business case is set to be presented at the October ordinary council meeting and then made available for public feedback.

"Council is yet to make a decision on this, and a business case will allow us to fully explore all options," Cr Scott said.

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NORTH WEST TELEGRAPH

10th September 2025

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Telegraph
Wednesday, September 10, 2025

Remote teacher awarded

MADELIN HAYES

A teacher from Parnngurr Community School, located 370km east of Newman, has been recognised at the 2025 Schools Plus Teaching Awards at Parliament House in Canberra.

Emma Davis took out the education gong for her contributions at Parnngurr through a two-way learning program that integrates Martu ecological knowledge with the WA curriculum.

The program, co-developed with local elders and families, supports First Nations students, many of whom speak English as a second or third language and have a range of learning needs. "When we go out on country with the children, they're the teachers and we're guided by them, because they know their country and they show us around," Ms Davis said.

"For example, we might see witchetty grubs and the children will go and find them to eat and then we will use that passion and understanding and we'll put it into the western science perspective.

"So we might join that into invasive species, learning about the scientific terms about the life cycle of an insect and doing engaging lessons that are based off those experiences that the children have."

Ms Davis was awarded $20,000 as part of the prize, including $10,000 to design a high-impact school visit program and a place in a year-long teaching fellowship. Now in its ninth year, the Schools Plus Teaching Awards — supported by the Commonwealth Bank — celebrates outstanding educators making a difference in disadvantaged communities.



Award-winning teacher Emma Davis with her students from Parnngurr Community School in the Pilbara.

Kids' heart health gets a big boost

LAURA NEWELL

A new program focused on strengthening support and prevention of rheumatic heart disease has been announced for the Kimberley and Pilbara.

Working in partnership with Aboriginal community controlled health organisations, regional hospitals and health services, the HeartKids Our Hearts, Our Future program will embed two Aboriginal support co-ordinators in the North West, thanks to funding from the Stan Perron Charitable Foundation.

Advertising for the two positions has begun with the aim to improve care navigation and engagement with clinics but also build community support and peer mentorship networks, deliver community co-designed RHD prevention information and education resources and support families through periods of travel and when requiring specialist care.

HeartKids chief executive Marcus Sandmann, announcing the initiative, said it would help reduce long-term impacts of RHD across the region.

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MIDWEST TIMES

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Times
Wednesday, September 10, 2025
midwesttimes.com.au



Yuna fashion designer and farmer Bridgitte Brooks.

Designer to promote wool use in fashion

MELISSA PEDELTY

Yuna fashion designer and farmer Bridgitte Brooks is aspiring to elevate wool in the fashion industry after being nominated as one of the six national recipients of the AgriEmpower Scholarship.

The inaugural scholarship was awarded by National Farmers' Federation and Woolworths on September 2 and provided seven ambitious young Australians funding to help further their efforts of achieving their agricultural ambition.

The fifth-generation wool producer said she intended to use the $20,000 to bridge the gap between Australian agriculture and fashion, elevating Australian wool in the fashion industry through education, design access and consumer engagement.

"I hope to build on my communication skills to ensure I can deliver effective messaging on a variety of levels, create opportunities to network, educate and connect the fashion industry to the wool industry to increase opportunities for wool use," she said.

"I want to leave the ag industry in a positive and better space for my children.

"Australia's ag industry is truly remarkable and is a fantastic industry to be in. It is an honour to be able to grow food and fibre for the world and I hope that more people will be aware of that."

Ms Brooks is the founder of Australian Merino Wool Athleisurewear brand, Homestead Road, which launched in late 2024.

Scholarship recipients have 18 months to strategically invest the funds in courses, conferences, professional development or overseas exposure for the purpose of gaining new ag-related skills.

Beyond the funding, participants will gain exclusive access to dynamic events and workshops curated by Woolworths and the NFF.

NFF president David Jochinke said the scholarship was a "life-changing" opportunity for the recipients and a "huge" opportunity for the ag sector.

He said it was difficult to only select seven people from such a big group of applicants.

"We were blown away by the volume and calibre of applications," he said.

Ms Brooks was nominated alongside Queensland's Kate Larnason and Andrew Powne, New South Wales' Jo Treasure and Ewan Leighton, South Australia's Rhiannon Schilling and Victoria's Liam Jess.

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Tearsheets / Chevron Wheatstone Julimar EP

THE AUSTRALIAN

8th September 2025

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Xi's Taiwan goal a bloodless takeover

MARK URBAN

Imagine it is October 2027 and, in the blinding light of early morning, a motorcade carrying officials from Beijing is arriving in the centre of Taipei, capital of Taiwan. Their appearance, as an up-to-the-minute liaison mission, follows a month-long naval and air quarantine of the island by massed Chinese forces.

There have been dogfights in the air and naval skirmishes as well, but the losses have been slight. At this moment of high tension, Taiwan's opposition parties, rumbling for years in parliament, stage a constitutional coup against the island's pro-Western president and invite the People's Republic to send over a team to possess further "reunification talks".

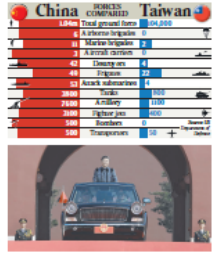
The world's stock markets, reeling from weeks since Beijing declared its de facto blockade, start to recede and the US president says he will respect close ill of the Taiwanese parliament, pulling back the US fleet.

One result will become clear: that this new legation in Taipei, rather like the liaison offices of the central people's government established in Hong Kong after Britain's 1997 handover, will become the real source of power and patronage. President Xi Jinping promises to respect the island's distinctive character, a global crisis is defused and he receives a thunderous reception at the 21st National Congress of the Chinese Communist Party.

This scenario for the Chinese takeover of Taiwan may sound unlikely, and it certainly assumes things going very much Xi's way. But its assumptions about China preferring to avoid a large-scale invasion, and preparations to exploit the island's political divisions, are in line with what intelligence and policy chiefs in the countries most concerned in geo-



Soldiers at Wednesday's parade in Beijing, right, Xi Jinping at Tiananmen Square



China	FORCES COMPARED	Taiwan
1.8m	Total ground force	94,000
6	Airborne brigades	0
8	Marine brigades	2
3	Aircraft carriers	0
42	Destroyers	4
49	Frigates	22
57	Attack submarines	4
3000	Tanks	800
7500	Artillery	1100
3000	Fighter jets	400
500	Bombers	0
500	Transporters	30

After last week's diplomatic success in Beijing, the Chinese leader may be feeling confident, but the imposition of Beijing's authority on the offshore outpost of democracy is still fraught with uncertainty.

"Hit big puzzle," argues Philip Gordon Jones of the Royal United Services Institute think tank, "is how to get Taiwan without bringing China into war with the US, which still has some scrap up its sleeve sufficient to make a mullet very dangerous."

The attitude of Donald Trump, or his successor, will therefore be critical. British ministers have concluded that Trump is not prepared to start a war in defence of Taiwan.

Highlighting this perception and why he argued we own America's diplomatic blunders, British former foreign secretary William Hague wrote in The Times that Xi "intends Taiwan to drop into the lap of the People's Liberation Army without a live round fired".

To add to Taipei's concerns, leaks from the new National Security Strategy suggest Trump is about to abandon the mention-ever of China as the primary goal of US policy, in favour of homeland defence.

The US administration does not speak with one voice on this, there being China hawks in its ranks. Pete Hegseth, the US Defence Secretary, has used tougher language than his President, warning in May of deescalating regional consequences if the People's Republic tried to force the issue. "The threat China poses is real," he said. "And it could be imminent."

Trump thinks he has an understanding on Taiwan with Xi, claiming the Chinese leader told him, "I will never do it so long as you're president". The danger of piquing Trump's pride is one more reason for China to avoid a spectacular D-Day-style invasion.

Added to the risk of US intervention is the danger of a global economic shock resulting from an interruption to Taiwan's microprocessor exports and the possibility of a humiliating setback for the PLA. All of this makes the "invasion" option unlikely, at least in the next few years.

Taiwan's distance from the mainland, small number of suitable landing beaches and built-up coastline would make it a highly uncertain business. It presents no big challenges on the American's huge mobilised armed forces when in 1944 they abandoned plans for Operation Causeway, an assault on the then Japanese-held island, that would have required more than 500,000 personnel and taken months to carry out.

Instead of hitting the beach, China's recent operations have emphasised flooding the air and sea around the island with forces that could isolate it while simultaneously waging information warfare designed to convince Taiwan's 23 million people that resistance is unsatisfactory is futile.

In the Strait Thunder 2025A exercises this year, the PLA rehearsed a three-prong operation: during the first its forces moved into position around the island; the second involved a missile bombardment of key Taiwanese bases; and the third saw mainland forces impose a blockade.

The two points of note are that no large scale crossing/landing were practised and that the PLA hoped to overawe Taiwanese forces by launching waves of fires on them.

To identify there are risks in using a missile blitz, not least that thousands of casualties might harden the islanders' will to resist and trigger some sort of US military intervention.

Some analysts therefore suspect Xi might adopt a less kinetic approach, using agreements that pro-independence forces were trying to strike pre-or in order to quarantine Taiwan by taking control of the air and sea spaces around it.

Beijing might calculate that some use of force might be necessary to prod into action political forces on the island that have long sought to avoid war.

The former US naval intelligence chief Rear Admiral Mike Studeman said in testimony to the US congress in July that such military pressure could be combined with a move by pro-Beijing parties in Taiwan to...

As for the timing, professor Zhang Wei-wei, a Chinese academic, caused a stir in May when he speculated that elections due on the island in the start of 2028 would not happen.

"The time is ripe to solve the Taiwan question," he told students at Fudan University, which is closely aligned with the communist leadership. "Take an will not have another election, right? Sleep thing lonely."

Following the 2024 election, President Lai Ching-te leads a minority administration. While opposition parties support keeping the island's democratic status quo, they could combine in times of crisis to cause Lai significant problems, accepting a closer mainland role in their affairs.

Although most Taiwanese questioned in polls at green their willingness to defend the island, it is also the majority view that they will end up unified with China. Thus, China's political messaging needs to emphasise the inevitability of union and the small chances of Taiwan gaining help. Unnecessary war Trump's position is therefore useful for Beijing.

Xi has use an array of options and ammunition to bring Taiwan into the People's Republic if he eschews a large-scale assault that would make it easier for America to look elsewhere.

Last week's parade in Beijing has helped China's leader in two ways as he considers how to take Taiwan: the show of military might could feed the view on the island that there's no point fighting, and he will be a hero if he turned that many countries will not want to jeopardise their relations with the People's Republic if he does make his move.

THE AUSTRALIAN

Kyiv's seat of power set ablaze

KYIV: Russia fired its biggest-ever aerial barrage at Ukraine early on Sunday, killing at least two people and leaving dozens of the Ukrainian government in Kyiv ablaze.

One strike set the roof of Ukraine's Cabinet of Ministers building alight, with smoke billowing over the capital. Drone strikes also damaged several high-rise buildings in Kyiv.

Russia has shown no sign of bowing to 36-year invasion of Ukraine, pushing hardline demands for ending the war despite efforts by the United States to broker a peace deal.

The barrage came after several European countries, led by France and Britain, pledged to deploy "reassurance" forces to Ukraine to patrol a peace deal between the warring sides – a demand Moscow has deemed unacceptable.

The strike on Ukraine's Cabinet of Ministers, a sprawling government complex in the heart of Kyiv, was the first such strike of the war. "The roof and upper floors were damaged due to an enemy attack. Rescuers are extinguishing the fire," Prime Minister Yulia Svyrydenko said.

Video from on the buildings showed fire crews being back low lines. The enemy terrorism and kills our people every day throughout the country."

Russia fired at least 805 drones and 13 missiles at Ukraine between late on Saturday and early Sunday, the largest of the war, according to the Ukrainian air force.

A strike on a nine-storey residential building in the west of Kyiv killed at least two people, a mother and her two-month-old son. More than a dozen others were wounded.

Ukraine's rescue service posted photos showing the building in flames.

AFP

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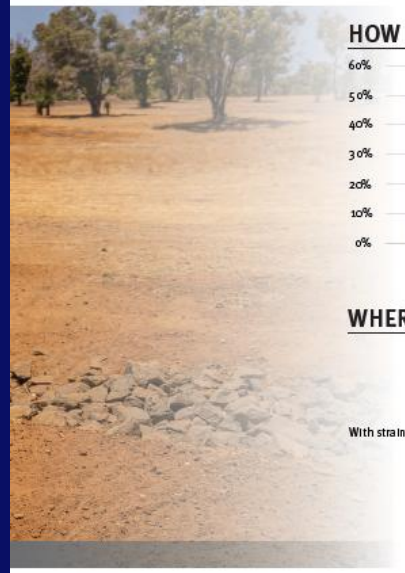
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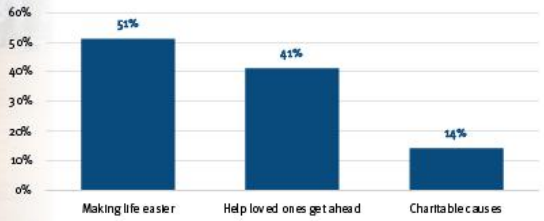
BUSINESS NEWS

22nd September 2025

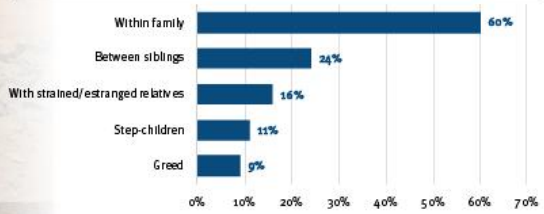
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HOW FAMILY WANTS INHERITANCE TO BE USED



WHERE INHERITANCE DISPUTES ARE ANTICIPATED



environment plan

seeking relevant persons' input

Chevron

Chevron has been operating in Australia for more than 70 years – creating enduring benefits and delivering reliable, affordable energy. We welcome feedback to enhance our environmental management measures as we progress offshore activities to support the ongoing supply of natural gas to Western Australia and the Asia Pacific region.

our activities

Chevron Australia, on behalf of the Wheatstone Project joint venture participants, operates the Wheatstone Project in Western Australia. Wheatstone is Australia's first natural gas 'hub' – with capability for third parties to process gas through its facilities.

To date, Wheatstone's two LNG trains have been supplied with gas from the Chevron Australia-operated Wheatstone and Iago fields, as well as gas from the Woodside-owned Julimar and Brunello fields. At the completion of an asset swap between Chevron Australia and Woodside, Woodside will transfer all of its interest in the Julimar-Brunello Project (65%) to Chevron Australia. We are now revising our Wheatstone Start-Up and Operations Environment Plan (the revised EP) to incorporate the Julimar-Brunello field production system.

The feedback we receive during consultation will inform and enhance the revised EP, which will be assessed by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

environment that may be affected (EMBA)

As part of our environmental assessment and consultation process, Chevron Australia creates an EMBA map to provide geographical context for stakeholders to determine if their functions, interests or activities may be affected by an offshore activity during operations or in an emergency scenario.

The map shows the operational area (OA) and the EMBA, which is based on a worst-case environmental scenario, which in this case is an unplanned release (oil spill) resulting from a major defect in a flowline or trunkline.

The EMBA has been defined through combining multiple simulations for the unplanned release scenario under different weather and ocean conditions.



This means that in the highly unlikely event an unplanned release does occur, a geographical area much smaller than the EMBA would be affected.

The majority of the impacts or risks directly arising from planned activities would occur within close proximity of the OA. Chevron Australia has systematic control measures to prevent and mitigate emergencies and to reduce the impact of planned activities on the environment, including ecological, social and cultural sensitivities.

we want to hear from you

We are now seeking feedback and input if you consider your functions, interests, or activities may be affected. This may include Traditional Owners and Custodians with a spiritual and cultural connection to land and sea Country, local community members, and those involved in commercial or recreational fishing and tourism.

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THANK YOU

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Winning art has a distinct voice

ALEXANDRA GIORGIANNI

Gamilaraay artist Juanita McLauchlan has won the MA Art Prize at the Sydney Contemporary art fair, with her work Mandaymanday / String of Stars praised for its innovative use of materials and distinct Australian voice.

Sponsored by MA Financial, the prize recognises and supports emerging and early-career artists in Australia. It returned this month for its third year with a record-breaking number of entries and an increased prize of $15,000.

McLauchlan is a proud Gamilaraay artist based on Wiradjuri Country in Wagga Wagga. Primarily involved in printmaking, she has been recognised for her talent across a variety of awards and programs. She previously receivied the National Regional Arts Fellowship in 2024 and participated in the McCahon House x Bundanon Exchange earlier this year.

Speaking at Sydney Contemporary's opening day, she expressed surprise at her win. "Thank you so much. I appreciate it, and I'd just like to thank MA Financial Group, Sydney Contemporary and Carriageworks for holding this space, but also, I'd like to thank and congratulate the other finalists," said McLauchlan. "I had no idea I was going to win, and I'm still in shock. I thought I was a winner just being a finalist."

Mandaymanday / String of Stars explores the balance between chaos and control in printmaking — using complex textures and layered processes to embrace the qualities of the medium. Using domestic fabrics such as vintage blankets as a base, she incorporates organic materials such as leaves and animal pelts to print, eco-dye, and encourage active interaction with her audience.

This experimental approach to both materials and ideas is deeply informed by her Indigenous heritage, which McLauchlan uses to shape and guide her practice.

Andrew Martin, managing director and head of asset management at MA Financial Group, said the company was proud to support emerging artists through the MA Art Prize, and praised McLauchlan's work.

"It is extraordinary. In person, you can see the passion and love that's gone into the work," he said.

"(Her work) stood out for its originality and distinctly Australian voice. Intertwining native and colonial materials to create an impression of Wiradjuri Country, Wagga Wagga, NSW… and symbolising connections of bloodlines across generations is unique and inspiring."

Mr Martin said the prize was not only a recognition of rising artistic talent, but also an opportunity to support a professional career.

Fair director Zoe Paulsen commented that the breadth of works displayed at this year's showcase is the product of 116 galleries and over 500 artists from all over Australia, Aotearoa, other Asia countries and beyond.



Mandaymanday / String of Stars

"As we all know, at the heart of Sydney Contemporary are our artists and gallerists … These programs reflect the ambition, diversity and vitality of Sydney Contemporary — not just an exhibition, but a cultural destination and a celebration of art in all its forms," she said.

McLauchlan is currently presenting an exhibition at the Art Gallery of New South Wales which will run until October 19.

environment plan

seeking relevant persons' input

Chevron

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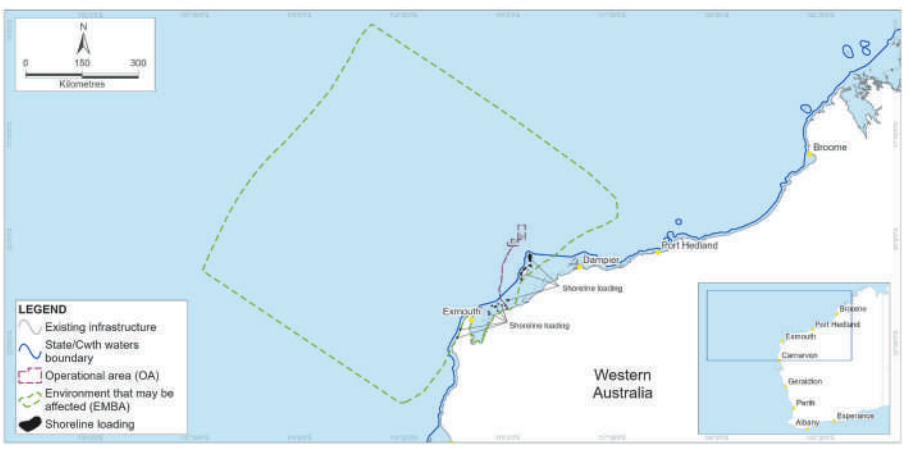
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The map shows the operational area (OA) and the EMBA, which is based on a worst-case environmental scenario, which in this case is an unplanned release (oil spill) resulting from a major defect in a flowline or trunkline.

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we want to hear from you

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Please contact us by **16 October 2025** to be included in consultations. Visit **australia.chevron.com/feedback**, call tollfree on **1800 225 195** or scan the **QR code** for more information.



chevronaustralia • Following

chevronaustralia 9w
The Wheatstone Project is Australia's first natural gas 'hub' – with capability for third parties to process gas through its facilities. To date, Wheatstone's two LNG trains have been supplied with gas from the Chevron Australia-operated Wheatstone and Iago fields, as well as gas from the Woodside-owned Julimar and Brunello fields.

At the completion of an asset swap between Chevron Australia and Woodside, Woodside will transfer all of its interest in the Julimar-Brunello Project (65%) to Chevron Australia.

We are now revising our Wheatstone Start-Up and Operations Environment Plan to incorporate the Julimar-Brunello

8 likes
September 9

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The Wheatstone Project is Australia's first natural gas 'hub' – with capability for third parties to process gas through its facilities. To date, Wheatstone's two LNG trains have been supplied with gas from the Chevron Australia-operated Wheatstone and Iago fields, as well as gas from the Woodside-owned Julimar and Brunello fields.

At the completion of an asset swap between Chevron Australia and Woodside, Woodside will transfer all of its interest in the Julimar-Brunello Project (65%) to Chevron Australia.

We are now revising our Wheatstone Start-Up and Operations Environment Plan to incorporate the Julimar-Brunello field production system and wish to consult with people and organisations whose functions, interests or activities may be affected.

More information that can help you identify if you are a relevant person can be found here: https://lnkd.in/g2KzqhTR



Todd Cardy and 133 others
4 comments • 3 reposts

Like Comment Repost

relevant persons information

Wheatstone start-up and operations
(including Julimar-Brunello)

Chevron Australia Pty Ltd (Chevron Australia), on behalf of the Wheatstone Project joint venture participants, operates the Wheatstone Project (Wheatstone) in northwest Western Australia.

Wheatstone is Australia's first natural gas 'hub' — with the capability for third parties to process gas through its facilities. To date, 80 percent of the gas processed through Wheatstone's two LNG trains has been supplied from the Chevron Australia-operated Wheatstone and Iago fields, and 20 percent has been supplied from the Woodside-owned Julimar and Brunello fields.

At the completion of an asset swap between Chevron Australia and Woodside, Woodside will transfer all of its interest in both the Wheatstone (13%) and Julimar-Brunello projects (65%) to Chevron Australia. The remaining 35% interest in Julimar-Brunello will be retained by KUFPEC.

During normal operations, hydrocarbons (gas and condensate) from the Wheatstone, Iago, Julimar and Brunello fields are gathered and transported to the Wheatstone Platform (the Platform) for initial processing. Gas and condensate are then transported via a 225-kilometre (km) trunkline to the onshore Wheatstone Gas Plant (the Gas Plant) for further processing. At the Gas Plant, gas and condensate are processed for export as liquefied natural gas (LNG) or piped to the mainland for WA domestic gas users.

Privacy - Terms

Chevron Australia is currently revising the Wheatstone Start-Up and Operations Environment Plan (the revised EP) to reflect the change in ownership of the Julimar-Brunello petroleum titles and incorporate the operation of the Julimar-Brunello field production system. While the revised EP will address this change in ownership, there will be no changes to the petroleum activities for Julimar-Brunello or Wheatstone.

The revised EP will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment.

This information sheet is intended to assist 'relevant persons' to make an informed assessment of the environmental impact and risks of our activities and to provide input and feedback to enhance the revised EP, including control measures to manage environmental impacts and risks of the activity.

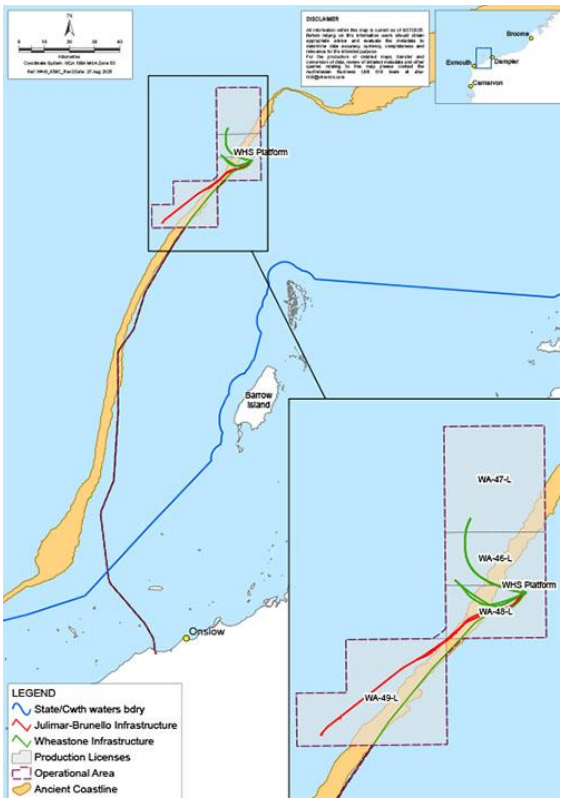
Relevant persons are those whose functions, interests or activities may be affected by our activities. This includes Traditional Owners and Custodians with a spiritual and cultural connection to Country, commercial and recreational fishing, tourism, individuals or groups in local communities.

Please note: in the context of an EP, each of the following is considered part of the 'environment':

- an ecosystem and their constituent parts, including people and communities
- natural and physical resources
- the qualities and characteristics of locations, places & areas
- the heritage value of places; and
- the social, economic and cultural features of the above.

location





Jump to detailed maps below

The location of current Wheatstone infrastructure and activities is shown in Table 1 and Figure 1 and spans the following petroleum titles:

- Wheatstone Platform: infrastructure licence WA 3-IL
- Wheatstone field: production licences WA-46-L, WA-47-L and WA-48-L
- Iago field: production licences WA-46-L and WA-48-L
- Trunkline: pipeline licences WA-25-PL (Cwth) and TPL/25 (State).

The location of the Julimar-Brunello infrastructure and petroleum activities is shown in Table 1 and Figure 1 and spans the following petroleum titles;

- Julimar-Brunello fields: production licence WA-49-L and pipeline licences WA-26-PL, WA-29-PL, WA-34-PL, WA-35-PL and WA-36-PL.

The Operational Area (OA) in which the petroleum activities described in the EP will be undertaken includes:

- petroleum titles (WA-46-L, WA-47-L, WA-48-L, WA-49-L, WA-3-IL, WA-25-PL, TPL/25, PL 99)
- a 200 m wide corridor centered over the trunkline within Commonwealth and State waters.

The start-up and operations activities detailed in the current EP also span into WA State waters, and on the WA mainland. The EP revision covers activities within Commonwealth waters only. Therefore, activities occurring in WA State waters, and on the mainland have been excluded.

schedule and duration

The Wheatstone Platform and subsea infrastructure normally operate 24 hours a day, 365 days a year.

Chevron Australia is expected to take ownership of the Julimar-Brunello Project from mid-2026, (subject to various conditions including acceptance of the revised EP).

Wheatstone (inclusive of the Julimar-Brunello Project) is expected to operate for at least 25 to 30 years.

activity overview

The revised EP will incorporate the ongoing operation of the Julimar-Brunello Project. The routine operation of the Wheatstone and Julimar-Brunello field production systems will continue under the revised EP.

Primary activities will remain unchanged from the in-force Julimar-Brunello and Wheatstone EPs and include:

- Operation of the Wheatstone, Iago, Julimar-Brunello wells and subsea infrastructure, and associated activities.
- Production of hydrocarbon and other produced fluids from wells via infield flowlines and pipelines to the Platform.
- Ongoing operation of the Platform.
- Periodic inspection, maintenance and repair (IMR) of the hydrocarbon system, the Platform and associated subsea infrastructure.

safe navigation area and marine exclusion zone

The following infrastructure is subject to a 500 m radius petroleum safety exclusion zone:

- Wheatstone Platform
- WST-1 production manifold and wells
- WST-2 production manifold and wells
- WST-3 production manifold and wells
- IAG-1 production manifold and wells
- IAG-2 production manifold and wells

The following infrastructure is subject to a 250 m radius petroleum safety exclusion zone:

- JULA production manifold
- BRUA production manifold and cross over manifold

Approval will be sought for new petroleum safety zones for the infrastructure associated with the Julimar-Brunello Stage 3 Project (a petroleum activity being undertaken by Woodside prior to transfer of ownership of the Julimar-

Brunello Project to Chevron Australia). At this stage the size of the petroleum safety exclusion zone is unknown.

No other exclusion zones will be sought for the subsea infrastructure.

environment that may be affected (EMBA)

As part of our environmental assessment and consultation process, Chevron Australia create an EMBA map to provide geographical context for stakeholders to determine if their functions, interests or activities may be affected by an offshore activity during operations or in an emergency scenario. There is no change to the current EMBA due to the change in ownership of the Julimar-Brunello Project.

Figure 1 shows the EMBA, which is based on a worst-case environmental scenario, which in this case is an unplanned release (oil spill) resulting from a major defect in a flowline or trunkline.

The EMBA has been defined through combining multiple simulations for the unplanned release scenario under different weather and ocean conditions. This means that in the highly unlikely event an unplanned release does occur, a geographical area much smaller than the EMBA would be affected.

The majority of the impacts or risks directly arising from planned activities would occur within close proximity of the OA.

Chevron Australia has systematic control measures to prevent and mitigate emergencies and to reduce the impact of planned activities on the environment, including ecological, social and cultural sensitivities.

Table 2 summarises the key impacts or risks and proposed control measures to manage these to levels that are as low as reasonably practicable (ALARP) and acceptable.

cultural values

Chevron Australia acknowledges that Traditional Owners and Custodians in the northwest region of WA have expressed a cultural and spiritual connection to Sea Country. This encompasses an obligation to protect cultural values and features — including songlines, dreaming stories, and the flora and fauna connected to them.

We are committed to ongoing engagement and consultation with relevant groups to protect these cultural values (tangible and intangible). This process will continue to inform our understanding and help facilitate the co-design of appropriate controls to avoid impacts.

Chevron Australia's Cultural Heritage Management System (CHMS) sets out processes and procedures to manage risks to cultural heritage, and Chevron Australia's obligations under relevant legislation including the *Aboriginal Heritage Act 1972* (WA) and the *Underwater Cultural Heritage Act 2018* (Commonwealth).

The CHMS includes governance of field surveys and monitoring, spatial data, compliance and assurance, heritage assessment, inadvertent discovery procedures, incident management, training and induction materials.

approvals process

Petroleum activities in Commonwealth waters are regulated by NOPSEMA. Before petroleum activities can take place, Chevron Australia must develop an EP which will be assessed by NOPSEMA in accordance with the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (the Regulations).

The Regulations require us to consult with relevant persons whose functions, interests and activities may be affected by the petroleum activity.

Following consultation, we will submit the revised EP to NOPSEMA, which will:

- describe the environment in which activities are planned to take place;
- include an assessment of environmental impacts and risks arising from the activities;
- identify control measures to manage the potential impacts and risks to levels that are ALARP and acceptable; and
- outline how Chevron Australia has engaged with relevant persons and how their feedback has been considered and addressed.

NOPSEMA will assess whether the revised EP satisfies the Regulations, including whether the environmental impacts and risks of operations will be managed so that they are ALARP and acceptable before accepting the EP.

key impacts, risks and proposed controls

A summary of key potential impacts and risks and proposed control measures for operational activities can be viewed in Table 2.

Please note: proposed control measures are subject to change through consultation with relevant persons and the subsequent NOPSEMA assessment process.

your input

We are now seeking your feedback and input if you consider your functions, interests, or activities may be affected based on the information provided, including the summary of the key environmental impacts and risks identified to date in Table 2.

We encourage you to provide additional details about the environment, aspects, consequences of the activity or control measures or to ask for further

information or consultation by **16 October 2025.**

You can contact us with any questions, requests for information, or to provide feedback by calling tollfree on **1800 225 195** or online below.

Relevant persons may request that the information they provide be treated as confidential. Chevron Australia will make this known to NOPSEMA and it will be identified as sensitive information and not published in the EP.

submit feedback here

what's next

The feedback we receive during consultation will be used to inform and enhance the EP before it is submitted to NOPSEMA for assessment.

We commit to keeping you informed and providing responses to any relevant person who so requests.

privacy notice

If you choose to provide feedback on this proposal, Chevron Australia will collect your name and contact details, in addition to your comments, for the purposes of maintaining contact with you and inclusion of your feedback in our submission to NOPSEMA. Provision of this information is purely voluntary, however if you choose not to provide it, we may not be able to contact you in the future regarding your submission. Chevron may transfer your information to NOPSEMA, if required and if you do not identify it as sensitive, and to other Chevron affiliates including our head office based in the United States. For further information regarding how we protect your personal information, and your rights, please refer to our privacy notice.

further information

detailed maps and tables

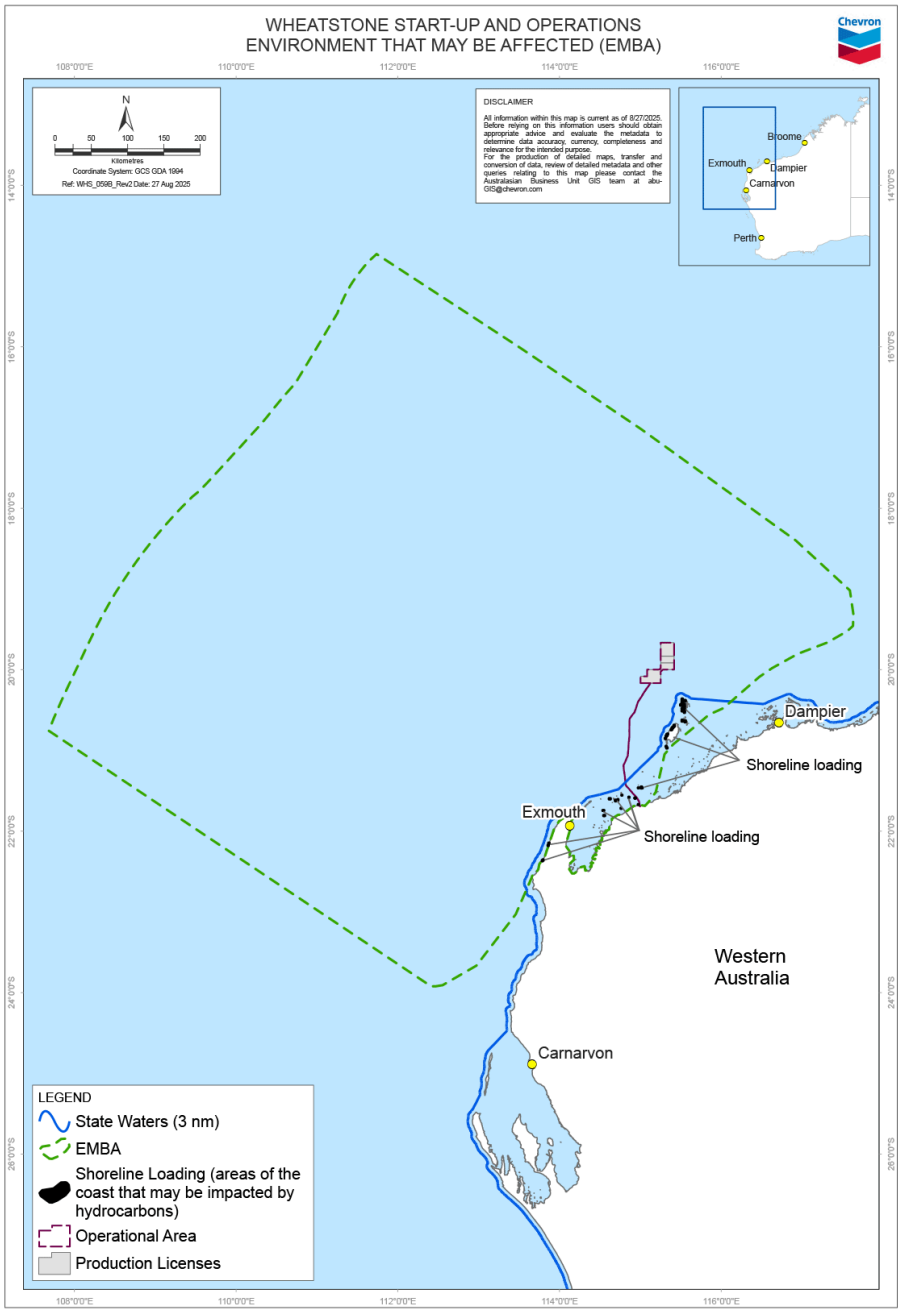


Figure 1: Wheatstone start-up and operations EMBA map.

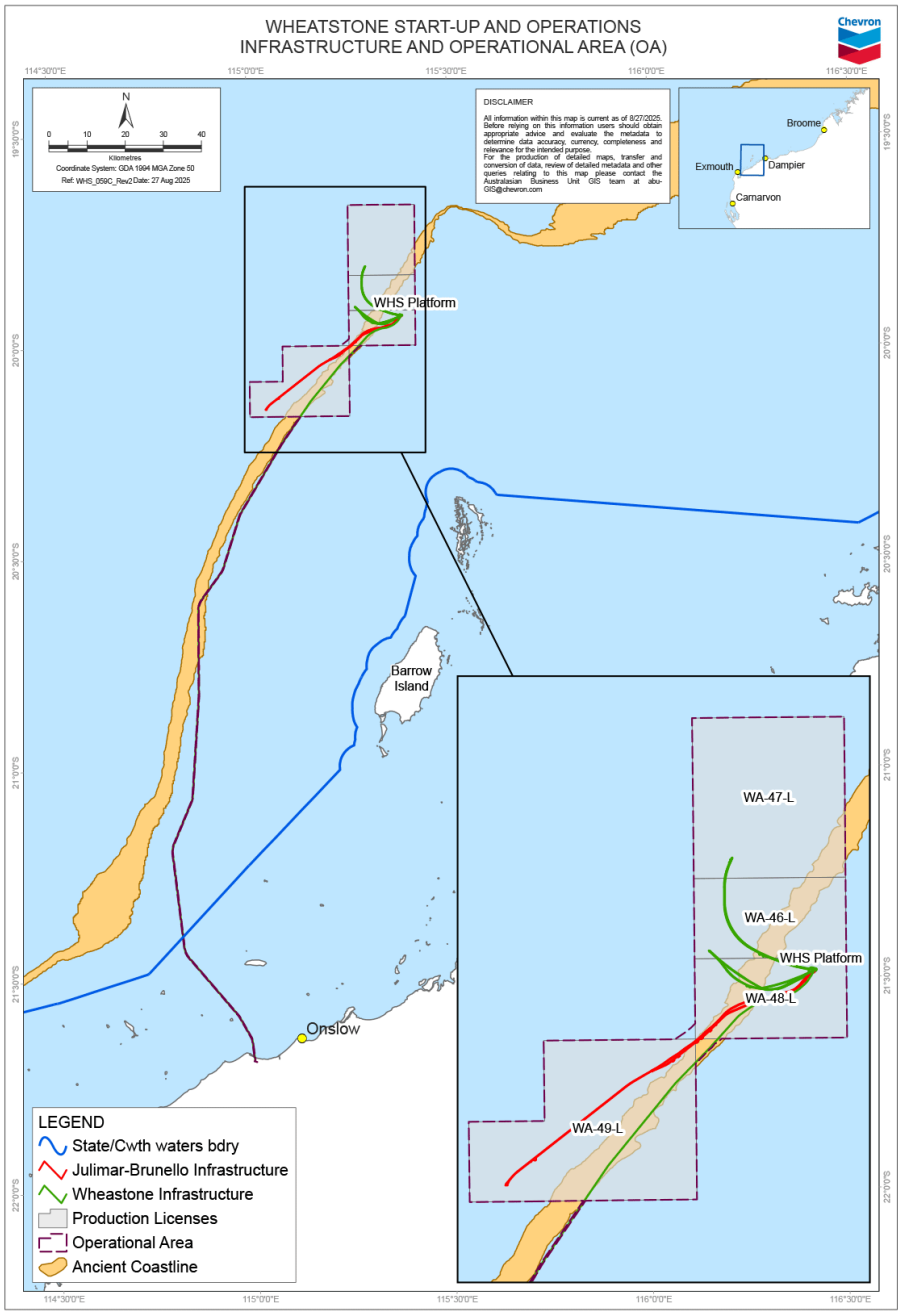


Figure 2: Wheatstone start-up and operations Infrastructure and operational area.

Table 1: Wheatstone Project key infrastructure (including additional Julimar-Brunello infrastructure) – view here

Table 2: Summary of key potential impacts and risks and key proposed control measures for operational activities – view here

resources

- Consultation on Offshore Petroleum Environment Plans – NOPSEMA
- Environment plan content requirements – NOPSEMA
- Environmental requirements – NOPSEMA
- NOPSEMA Assessment Process Environment Plans
- Offshore Petroleum Greenhouse Gas Storage (Environment) Regulations
- Chevron Operational Excellence Management System (OEMS)
- Consultation in the course of preparing an environment plan – NOPSEMA
- Wheatstone start-up and operations (including Julimar-Brunello) information sheet

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1.1 Regulation 25(1)(a)—each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the EP, or the revision of the EP, may be relevant

1.1.1 Commonwealth Departments or Agencies

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Australian Border Force (ABF)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with ABF on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • ABF did not raise any objections or claims relating to the activity. • ABF did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to ABF to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Australian Communications and Media Authority (ACMA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	22/09/2025	002582	Email	ACMA replied, and raised the presence of submarine cable infrastructure operated by Telstra and Vocus within the vicinity. ACMA recommended engaging with AHO. ACMA confirmed that they do not require additional consultation on environment plans associated with the Julimar-Brunello or Wheatstone projects.	ACMA raised the presence of submarine cable infrastructure operated by Telstra and Vocus within the vicinity and recommended engaging with AHO.	**Claims have merit**: The feedback raised by ACMA is considered relevant.	The presence of submarine cables is described in Section 4.4.6. Telstra, Vocus and AHO were engaged with for this activity.
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
	05/11/2025	002681	Email	CAPL acknowledged ACMA email (Record ID 002582) and confirmed that Telstra, Vocus and AHO were engaged with for this activity.	No objection or claim raised		
				Summary: • CAPL commenced consultation with ACMA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA,			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				potential impacts and risks and control measures. • ACMA did not raise any objections or claims relating to the activity. ACMA provided feedback regarding submarine cable infrastructure in the region, and recommended engaging with AHO. Submarine cables are discussed in Section 4.4.6 of the EP, and Telstra, Vocus and AHO have been engaged with as Relevant Persons for this activity. • CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) Background on ACMA responsibilities – (2) Noted that EP Operational Area not in ACMA protection zones. – (3) Awareness of existing cable infrastructure and suggested to contact Telstra and Vocus. – (4) Recommended contacting AHO for			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				further details on the location of cables. – (5) Additional consultation not needed. This input is consistent with CAPL's current approach. • CAPL has provided a reasonable period and sufficient information to ACMA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Australian Fisheries Management Authority (AFMA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	11/09/2025	002538	Email	AFMA confirmed that they had no comments on the EP, and would like to be included in future consultation on this matter. AFMA encouraged engaging with Commonwealth Fisheries Association (CFA), Tuna Australia, and the Australian Southern Bluefin Tuna Industry Association (ASBTIA).	AFMA requested inclusion in future consultation for the EP. AFMA raised CFA, Tuna Australia and ASBTIA as potential Relevant Persons.	**Claims have merit:** As a Relevant Person, the request for ongoing engagement is considered fair and reasonable. CAPL acknowledge the potential Relevant Persons AFMA has raised for consideration.	No change made to the EP. CAPL will provide ongoing engagement with AFMA in accordance with the EP, specifically Table 9-5. CAPL has engaged with CFA and Tuna Australia.

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
							The Southern Bluefin Tuna Fishery, and by extension ASBITIA, have not been included as a Relevant Person. The fishery is active within waters in the Great Australian Bight and south-eastern Australia (i.e. not within the OA or EMBA) (Section 4.4.1). Additionally, during engagement for another EP, ASBTIA have previously informed CAPL that they have no direct interest in the location.
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	22/09/2025	002560	Email	CAPL thanked AFMA for their email and acknowledged their feedback. CAPL advised if AFMA require anything further in relation to this activity, please let us know by the 16th of October.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with AFMA on 4 September 2025 via formal written notification advising they had been identified as a			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • AFMA did not raise any objections or claims relating to the activity. AFMA provided feedback and suggested engaging with CFA, Tuna Australia and ASBTIA. CAPL has engaged with CFA and Tuna Australia, and has excluded ASBTIA based on previous feedback provided by ASBTIA, and as Woodside ruled them as not relevant in the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • AFMA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to AFMA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Australian Hydrographic Office (AHO)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	04/09/2025	002581	Email	AHO acknowledged that they received the email.	No objection or claim raised		
	05/09/2025	002535	Email	The AHO confirmed that they have no concerns with any of the activities proposed. AHO raised the requirement to provide notification of commencement.	AHO raised the requirement to provide notification of commencement.	**Claim has merit:** The requirement to notify AHO on activity commencement is relevant and applicable to this activity.	No change made to the EP. The requirement to notify AHO is captured in Table 9-5 of the EP.
	22/09/2025	002585	Email	CAPL acknowledged the receipt and sharing of information. CAPL noted AHO request to receive updates and will provide notifications as required.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with AHO on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • AHO did not raise any objections or claims relating to the activity. AHO provided feedback regarding notification of commencement requirements, which are captures in Table 9-5 of the EP. • AHO did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to AHO to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Australian Maritime Safety Authority (AMSA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	10/09/2025	002537	Email	AMSA responded and raised vessel traffic in the region, notification requirements (including notification to AHO) and the need for anti-collision measures.	AMSA raised vessel traffic, notification requirements and the need for anti-collision measures.	**Claims have merit:** Vessel traffic, notification requirements and vessel collision controls are relevant and applicable to this activity.	Section 7.4.1 ALARP decision context justification' revised to include statement regarding receipt of one claim. No change to previous decision context (i.e. still Decision Context A). 'External context' (within 'Determination of acceptability') for Section 7.4.1 has been updated with a summary of claim and response.

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
							Notification requirements to AMSA and AHO are included in Table 9-5 of the EP. Vessel collision controls are standard within CAPL EPs, are already included within the EP.
	22/09/2025	002584	Email	CAPL replied, noting AMSA advice and will assess and detail in the EP.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with AMSA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • AMSA did not raise any objections or claims relating			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				to the activity. AMSA provided feedback regarding notification requirements, vessel traffic, control measures and the risk of vessel collision. These requirements are captured within the EP in Table 9-5 and Section 7.4.1. • CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) Informed Woodside that consultation on their Oil Pollution First Strike Plan is not needed. – (1) Noted heavy vessel traffic in activities area and that its spatial data gateway and portal has shipping data. – (2) Confirmed operations commencement notifications. – (3) Reminded about COLREGS obligations. – (4) Access to data sets and maps This input is consistent with CAPL's current approach.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to AMSA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Clean Energy Regulator (CER)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	14/10/2025	002633	Email	CER confirmed receipt and that further consultation with the CER is not required. CER noted that CAPL must continue to report Wheatstone under the National Greenhouse and Energy Reporting Scheme and the Safeguard Mechanism.	CER noted that CAPL must continue to report Wheatstone under the National Greenhouse and Energy Reporting Scheme and the Safeguard Mechanism.	**Claim has merit:** CAPL acknowledge the advice from CER. The Wheatstone Project is registered with the CER under both the NGER and Safeguard Mechanism schemes and is subject to the reporting requirements of these	No changes made to the EP.

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
						regulatory frameworks.	
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with CER on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • CER did not raise any objections or claims relating to the activity. • CER did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to CER to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Department of Agriculture, Fisheries and Forestry (DAFF)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DAFF on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DAFF did not raise any objections or claims relating to the activity. • DAFF did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DAFF to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Department of Climate Change, Energy, Environment and Water (DCCEEW) - Cultural Heritage	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DCCEEW on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• DCCEEW did not raise any objections or claims relating to the activity. • DCCEEW did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DCCEEW to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Department of Defence (DoD)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DoD on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DoD did not raise any objections or claims relating to the activity. • DoD did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DoD to make an informed			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Director of National Parks (DNP)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	25/09/2025	002559	Email	DNP requested further information and shape files from CAPL. CAPL provided relevant information and shape files as requested.	DNP requested further information and shape files from CAPL.	**Claim has merit:** As a Relevant Person, the request for further information is considered fair and reasonable.	No change made to the EP. CAPL responded, and provided the requested information and shape files.
	15/10/2025	002643	Email	DNP responded and noted the location of the following in relation to the activity: • Montebello Marine Park • Ningaloo Marine Park • Gascoyne Marine Park • Ancient coastline at the 125-m depth contour (KEF) • Multiple BIAs.	DNP raised the following: • Multiple receptors • Activities in relation Pygmy Blue Whales or Humpback whales BIAs • Timing of activities in relation to species' peak	**Claims have merit:** The advice provided by DNP is relevant and applicable to the EP.	No change made to the EP. The relevant marine parks and their values are already included and considered as a receptor within the EP (Section 4.5). KEFs are described in Section 4.3.6.1, and BIAs are

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				DNP raised objections and claims regarding: • Activities in relation Pygmy Blue Whales or Humpback whales BIAs • Timing of activities in relation to species' peak migration and foraging behaviours • Timing of activities in relation to critical turtle habitat within nesting season • Light emissions and relevant guidelines • Potential cumulative impacts on species. DNP also noted the following for consideration: • NOPSEMA and Park Australia's 'Petroleum activities and Australian Marine Parks' guidance note • The North-west Network of Marine Parks Management Plan 2018 • DNP notification requirements.	migration and foraging behaviours • Timing of activities in relation to critical turtle habitat within nesting season • Light emissions and relevant guidelines • Potential cumulative impacts on species. • Guidance note and management plan for consideration • DNP notification requirements.		described in Section 4.3.3. Physical presence and marine fauna is considered in Section 7.4.2. Light emissions (and DCCEEW's National Light Pollution Guidelines for Wildlife) are considered in Section 7.4.6. The raised guidance note and management plan have been considered during EP development. The notification requirements in a spill event are included in Section 8.4.2. CAPL provided a response to DNP and thanked them for their advice (Record ID: 002669).
	28/10/2025	002669	Email	CAPL thanked DNP for their response and acknowledged the provided advice. CAPL advised the close of consultation.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DNP on 4 September 2025 via formal written notification advising			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • CAPL has considered the input, objections and/or claims received from DNP as well as those that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) Ensure the EP identifies and manages all impacts and risks to AMP values, and clearly demonstrates that activities will not be inconsistent with the management plan. – (2) Notification guidance for emergency response in			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				event of an oil/gas pollution incidences. This input is consistent with CAPL's current approach. • CAPL has provided a reasonable period and sufficient information to DNP to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.1.2 State Departments or Agencies

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Department of Biodiversity, Conservation and Attractions (DBCA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	16/09/2025	002541	Email	DBCA replied, and noted the proximity of the activity to important areas including: • Ningaloo Marine Park (M 2), • Barrow Island Marine Park (M 10), • Montebello Islands Marine Park (reserve no. M 9),	DBCA raised several factors for consideration, including potential receptors, oil spill response	**Claims have merit:** The factors raised for consideration are relevant to the activity.	No change made to the EP. The State Marine Parks within the EMBA are identified within Section 4.5.2 of the EP. Noise emissions are risk assessed in Section 7.1.5, 7.2.5 and 7.4.7 of the EP. Oil spill preparedness and

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• Barrow Island Management Area (M 11), • Murion Islands Marine Islands Marine Management Area (M 12) and • biologically important areas (BIAs). DBCA has advised the need for comprehensive baseline monitoring and robust oil spill response preparedness. DBCA suggested consideration be given to potential impacts on pelagic and migratory species from noise emissions. DBCA advised CAPL the access to reserves managed under the CALM Act, or involving threatened fauna in State waters, may require additional approvals.	preparedness and noise emission impacts on pelagic and migratory species.		response is covered in the ABU Consolidated OPEP and operational and scientific monitoring is covered in the OSMP. CAPL thanked DBCA for their advice (Record ID: 002672)
	28/10/2025	002672	Email	CAPL thanked DBCA and acknowledged their recommendations, and confirmed close of consultation.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DBCA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DBCA did not raise any objections or claims relating to the activity. DBCA provided feedback including potential receptors, oil spill response preparedness and noise emission impacts on pelagic and migratory species. These factors are considered within the EP. • CAPL has considered the following input, objections and/or claims that were raised			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) Activities may affect ecologically important areas and marine fauna. – (2) Consider establishing baseline survey data on activities areas. – (3) Encouraged Woodside to implement a Before- After Control Impact (BACI) framework. – (4) Refer to DCCEEW's light pollution guidelines – (5) Notify DBCA Pilbara office in event of hydrocarbon release. – (6) DBCA informed they do not implement oiled wildlife response on behalf of a petroleum operator. . – (7) Refer to DoT's guidance on Marine Oil Pollution. This input is consistent with CAPL's current approach. • CAPL has provided a reasonable period and sufficient information to DBCA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Department of Energy and Economic Diversification (DEED)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Formerly Department of Jobs, Tourism, Science and Innovation (JTSI)							
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	05/09/2025	002513	Email	DEED replied and confirmed that they had no comments to raise on the EP.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DEED on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DEED did not raise any objections or claims relating to the activity. • DEED did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DEED to make an informed assessment of the possible consequences of the activity on its			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Department of Planning, Lands and Heritage (DPLH)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	3/10/2025-16/10/2025	002644	Email	DPLH thanked CAPL for their email, and indicated they would review and provide a response as soon as possible. DPLH requested activity shapefiles. CAPL responded and provided the requested shapefiles. DPLH thanked CAPL and acknowledged the provided information. DPLH noted that based on the provided shapefiles and the information held by DPLH, no approvals under the *Aboriginal Heritage Act 1972* were required. DPLH noted that Section 15 of the *Aboriginal Heritage Act 1972*. requires any person, who has knowledge of the existence of anything that may relate to the Act, to report it to the Registrar of Aboriginal Sites (Registrar). The discovery of new or updated information on Aboriginal Heritage should be submitted to DPLH.	DPLH requested activity shapefiles. DPHL provided advice regarding the *Aboriginal Heritage Act 1972*.	**Claims have merit:** As a relevant person, DPLH's request for further information is considered fair and reasonable, and the advice provided is relevant to the activity.	No change made to the EP. CAPL provided DPLH with the requested shapefiles. CAPL acknowledges the advice provided by DPLH regarding the *Aboriginal Heritage Act 1972*. As the activity is located offshore in Commonwealth waters, the discovery of new or additional information regarding Aboriginal Heritage sites covered by the *Aboriginal Heritage Act* is not expected. Should certain underwater cultural heritage be discovered, CAPL will act in accordance with the *Underwater Cultural Heritage Act 2018* (Commonwealth).

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	13/11/2025	002695	Email	CAPL thanked DPLH and acknowledged their recommendations, and confirmed close of consultation.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DPLH on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DPLH did not raise any objections or claims relating to the activity. • DPLH did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DPLH to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Department of Water and Environmental	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Regulation (DWER)				sheet and a link to CAPLs consultation webpage.			
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DWER on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DWER did not raise any objections or claims relating to the activity. • DWER did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DWER to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Department of Primary Industries and Regional Development (DPIRD)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DPIRD on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DPIRD did not raise any objections or claims relating to the activity. • DPIRD did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DPIRD to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Department of Transport (DoT) - Maritime Environmental Emergency Response (MEER) - Marine Pollution	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	23/09/2025	002557	Email	DOT requested the relevant and current version of the OPEP. CAPL provided Consolidated ABU OPEP to DOT. CAPL confirmed if there is anything further in relation to this activity, please let us know by the 16th of October.	DOT requested further information.	**Claim has merit:** As a Relevant Person, the request for further information is considered fair and reasonable.	No change made to the EP. CAPL provided the requested information.
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DoT on 4 September 2025 via formal written notification advising they had been identified as a relevant person with			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DoT did not raise any objections or claims relating to the activity. DoT requested further information, which CAPL provided. • DoT did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DOT to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Environmental Protection Authority (EPA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with EPA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • EPA did not raise any objections or claims relating to the activity. • EPA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to EPA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Pilbara Ports Authority (PPA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				sheet and a link to CAPLs consultation webpage.			
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with PPA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • PPA did not raise any objections or claims relating to the activity. • PPA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to PPA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.2 Regulation 25(1)(b) - Department of the responsible State Minister

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Department of Mines, Petroleum and Exploration (DMPE) *Formerly Department of Energy, Mines, Industry, Regulation and Safety (DEMIRS)*	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with DMPE on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • DMPE did not raise any objections or claims relating to the activity. • DMPE did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to DMPE to make an informed assessment of the possible consequences of the activity on its functions, interests and			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.3 Regulation 25(1)(d)— Person or organisation whose functions, interests, or activities may be affected by the petroleum activity

1.3.1 First Nations people and/or representative bodies

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	03/09/2025	002501	Email	CAPL emailed BTAC to discuss other EPs. CAPL advised due to their asset swap with Woodside and exit from the North West Shelf Joint Venture, CAPL need to incorporate Julimar Brunello operations into our Wheatstone Operations EP, and that consultation would be undertaken by CAPL. CAPL confirmed they have met with NOPSEMA to improve consultation methodology. This should address feedback, including consultation fatigue and better information sharing.	No objection or claim raised		
	04/09/2025	002544	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	25/09/2025	002590	Email	CAPL provided BTAC with the latest "Bulletin," outlining CAPL ongoing Environmental Plans. The Bulletin provides a detailed overview of proposed activities, including descriptions, location maps, timing, potential impacts, and the schedule for formal consultation. CAPL encourage BTAC to review the document and share any feedback or questions.	No objection or claim raised		
	03/10/2025	002576	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	29/10/2025	002697	Face to Face	CAPL met with BTAC in relation to other matters and reminded BTAC that CAPL had provided several attempts at consultation on EP but had not yet had a response. BTAC advised CAPL that they were establishing a working group and process for consultation and that they would be in touch to advise. CAPL reiterated our offer that we are happy to come and present to the working group on any of our EP's	No objection or claim raised		
				Summary: • CAPL commenced consultation and discussions relating to the EP with BTAC on 3 September 2025. Written notification was provided via email on 4 September 2025. • CAPL has provided BTAC the opportunity to provide feedback and CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures to enable an informed assessment by BTAC. BTAC had a period of over 6 weeks for consultation, which CAPL assessed to be a reasonable period to allow BTAC to identify the effect of the proposed activity on their functions, interests or activities, and to provide any objections or claims as set out in Section 6.2.5 of the EP. • CAPL has met with BTAC face-to-face as well as maintaining contact through email exchanges. • CAPL has informed BTAC that they may request information provided during consultation not to be published (Regulation 25(4)) during consultation co-design, in opening consultation emails and activity information sheets. CAPL has also previously provided BTAC with a copy of NOPSEMA's consultation guideline, which further describes their right to request information not to be published.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL and BTAC continue to engage separately to EP consultations in relation to their Wheatstone Native Title Agreement and onshore Cultural Heritage activities at Wheatstone and Barrow Island. • CAPL executed an engagement plan / funding agreement in April 2024 which confirmed acceptance of cost recovery for BTAC to participate in consultation as well as other activities. • CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) BTAC stated that its interests include archaeological sites identified on nearshore islands including the Montebello Islands, Barrow Island and the Mackerel Islands. – (2) BTAC has a cultural obligation to care for the environmental values of Sea Country but needed support to articulate these in a format suitable for consultation. – (3) BTAC will send Woodside a ranger program proposal. This input is consistent with CAPL's current approach. CAPL will continue to engage BTAC as part of its ongoing consultation for environment plans, including progressing cultural mapping, as outlined in Section 9.3.4.1 of the EP.			
Mardathoonera Cultural Heritage Pty Ltd (MCH) *Note: Engaged by Woodside through Save Our Songlines (SOS)*	05/09/2025	002496	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	17/09/2025	002533	Email	MCH legal representatives emailed CAPL the MCH submission on the revision of the Wheatstone start-up and operations EP. The submission includes input on: • cultural heritage • Climate Change and Risk Assessment.	MCH raised First Nations people and the natural environment as a result of climate change.	**Claim has merit:** The receptors and risks raised are relevant and should be addressed within the EP.	The risk assessment for greenhouse gas emissions (Section 7.2.3.7) and Section 7.5 Intangible cultural heritage was revised to include input received during consultation.
	01/10/2025	002570	Email	CAPL provided MCH with the latest "Bulletin," outlining CAPL ongoing Environmental Plans. The Bulletin provides a detailed overview of proposed activities, including descriptions, location maps, timing, potential impacts, and the schedule for formal consultation. CAPL encourage MCH to review the document and share any feedback or questions.	No objection or claim raised		
	02/12/2025	002728	Email	CAPL responded to an email received on 17 September from MCH (Record ID 002533). CAPL thanked MCH for providing input as part of consultation on these revisions. CAPL responded to all comments made by MCH in relation to the EP. CAPL noted that this EP is being revised to include the operation of Julimar Brunello and that Wheatstone infrastructure referenced in the information sheet is already in place. Consideration of cultural heritage features will be included within the environmental impact and risk assessment section of the environment plan.	No objection or claim raised		
	04/12/2025	002732	Email	MCH advised CAPL of their preference on capturing information.	MCH requested information be captured confidentially.	**Claim has merit:** CAPL acknowledge the request for information to be captured confidentially.	Information provided will be captured confidentially within the Sensitive Information Report.

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • Formal written notification was provided via email on 4 September 2025, advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures to enable an informed assessment. • In relation to MCH interests regarding intangible cultural heritage, oceans and marine fauna that may be impacted by the activities subject of the EPs, MCH has previously communicated cultural values or features to CAPL through consultation. As requested on 4 December 2025 (Record ID 002732), CAPL has captured information confidentially within the Sensitive Information Report. • CAPL has informed MCH that they may request information provided during consultation not to be published (Regulation 25(4)) in opening consultation emails and activity information sheets. CAPL has also previously provided MCH with a copy of NOPSEMA's consultation guideline, which further describes their right to request information not to be published. • CAPL has provided a reasonable period and sufficient information to allow MCH to identify the effect of the proposed activity on their functions, interests and activities, and to provide any objections or claims as set out in Section 6.2.5 of the EP. • MCH raised First Nations people and the natural environment and climate change (Record ID 002533). Section 7.2.3.7 of the EP was revised to include this input.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) and (2) SOS and/or [Individual 1] identified cultural features (information captured confidentially within the Sensitive Information Report). – (3) SOS and/or [Individual 1] has an interest in marine mammals, seagrass, and the meeting of freshwater and saltwater was demonstrated. – (4) SOS and/or [Individual 1] stated that as a Mardathoonera Lore woman, Elder and Traditional Custodian of Murujuga, their connection and cultural responsibilities to Murujuga has previously been provided, however some were culturally sensitive and could not be shared publicly. – (5) SOS and/or [Individual 1] stated that the potential impacts on cultural values were not identified or mentioned in the Consultation Information Sheet, and specifically, questioned if the cultural values outlined by Woodside had been properly considered and mitigated in the draft EP including potential impacts on: ▪ (1) whales, as well as marine mammals, seagrass, and the meeting of freshwater and saltwater; and ▪ (2) Songlines, Dreaming and Energy Lines. This input is consistent with CAPL's current approach. CAPL is continuing to engage with MCH-regarding future and ongoing consultation.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	04/09/2025	002544	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	25/09/2025	002569	Email	CAPL provided NTGAC with the latest "Bulletin," outlining CAPL ongoing Environmental Plans. The Bulletin provides a detailed overview of proposed activities, including descriptions, location maps, timing, potential impacts, and the schedule for formal consultation. CAPL encourage NTGAC to review the document and share any feedback or questions.	No objection or claim raised		
	03/10/2025	002579	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL sent a formal written notification on 4 September 2025 advising NTGAC that they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. • CAPL provided an overview of the activity and provided a link to their website for further information regarding the activity. • CAPL notified that NTGAC that they are committed to ongoing consultation communication and welcome meaningful feedback. • NTGAC have previously provided information on their Healthy Sea Country Plan that provides guidance on the areas of importance to them for Sea Country.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL have committed to a continued discussion on the identification of Priority Protection Area's that align with the Health Sea Country Plan. • CAPL has informed NTGAC that they may request information provided during consultation not to be published (Regulation 25(4)) in opening consultation emails and activity information sheets. CAPL has also previously provided NTGAC with a copy of NOPSEMA's consultation guideline, which further describes their right to request information not to be published. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures to enable an informed assessment by NTGAC. • CAPL has provided a reasonable period and sufficient information to allow NTGAC to identify the effect of the proposed activity on their functions, interests and activities, and to provide any objections or claims as set out in Section 6.2.5 of the EP. • CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) NTGAC have expressed a general interest in whales and whale sharks. Table 4-18 of the EP was updated to capture this input. CAPL will continue to engage NTGAC as part of its ongoing consultation for environment plans, as outlined in Section 9.3.4.1 of the EP.			
Nhuwala Claimant Group	04/09/2025	002544	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	25/09/2025	002568	Email	CAPL provided Nhuwala Claimant Group with the latest "Bulletin," outlining CAPL ongoing Environmental Plans. The Bulletin provides a detailed overview of proposed activities, including descriptions, location maps, timing, potential impacts, and the schedule for formal consultation. CAPL encourage Nhuwala Claimant Group to review the document and share any feedback or questions.	No objection or claim raised		
	03/10/2025	002577	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL sent a formal written notification on 4 September 2025 advising the Nhuwala Claimant Group that they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. • CAPL provided an overview of the activity and provided a link to their website for further information regarding the activity. • CAPL notified that Nhuwala Claimant Group that they are committed to ongoing consultation communication and welcome meaningful feedback. • CAPL has informed Nhuwala Claimant Group that they may request information provided during consultation not to be published (Regulation 25(4)) in opening consultation emails and activity information sheets. CAPL has also previously provided Nhuwala Claimant Group with a copy of NOPSEMA's consultation guideline, which further describes their right to request information not to be published.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures to enable an informed assessment by Nhuwala Claimant Group. • CAPL has provided a reasonable period and sufficient information to allow Nhuwala Claimant Group to identify the effect of the proposed activity on their functions, interests and activities, and to provide any objections or claims as set out in Section 6.2.5 of the EP. • Nhuwala Claimant Group did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). CAPL will continue to engage Nhuwala Claimant Group as part of its ongoing consultation for environment plans, as outlined in Section 9.3.4.1 of the EP.			
Wirrawandi Aboriginal Corporation RNTBC (WAC)	27/08/2025	002486	Face-to-face	During consultation for another EP, CAPL notified WAC of Julimar EP revision due to launch at the start of September. CAPL advised that the EP revision was related to the NWS asset swap with Woodside.	No objection or claim raised		
	04/09/2025	002544	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	10/09/2025	002620	Email	CAPL emailed WAC following up on potential next steps in developing priority protection area plans for ongoing consultation.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	25/09/2025	002568	Email	CAPL provided WAC with the latest "Bulletin," outlining CAPL ongoing Environmental Plans.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				The Bulletin provides a detailed overview of proposed activities, including descriptions, location maps, timing, potential impacts, and the schedule for formal consultation. CAPL encourage WAC to review the document and share any feedback or questions.			
	03/10/2025	002578	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation and discussions relating to the EP with WAC on 27 August 2025. Formal written notification was provided via email on 4 September 2025, advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity • CAPL has met with WAC representatives in a face-to-face meeting and maintained contact through email correspondence • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures to enable an informed assessment by WAC. • CAPL has informed WAC that they may request information provided during consultation not to be published (Regulation 25(4)) during consultation co-design, in opening consultation emails and activity information sheets. CAPL has also previously provided WAC with a copy of NOPSEMA's consultation guideline, which further describes their right to request information not to be published. • WAC did not raise any objections or claims relating to the activity.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) WAC advised it had no issues or concerns for this EP. – (2) WAC is keen to participate in Sea Country mapping. – (3) During ongoing engagement, WAC asked Woodside about oil spill reporting. This input is consistent with CAPL's current approach. • CAPL has provided a reasonable period and sufficient information to allow WAC to identify the effect of the proposed activity on their functions, interests or activities, and to provide any objections or claims as set out in Section 6.2.5 of the EP. CAPL will continue to engage WAC as part of its ongoing consultation for environment plans, as outlined in Section 9.3.4.1 of the EP.			

1.3.2 Commercial fishery licence holders and/or representative bodies

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Australian Council of Prawn Fisheries (ACPF)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with ACPF on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • ACPF did not raise any objections or claims relating to the activity. • ACPF did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to ACPF to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Aquaculture Council of Western	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Australia (ACWA)				activities and provided an information sheet and a link to CAPLs consultation webpage.			
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with ACWA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • ACWA did not raise any objections or claims relating to the activity. • ACWA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to ACWA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				any feedback provided in the future (Section 9.3.4.1).			
Boating Industry Association Western Australia (BIAWA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with BIAWA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • BIAWA did not raise any objections or claims relating to the activity. • BIAWA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to BIAWA to make an informed assessment of the possible consequences of the activity on its functions,			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Commonwealth Fisheries Association (CFA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with CFA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • CFA did not raise any objections or claims relating to the activity. • CFA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to CFA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Tuna Australia	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Tuna Australia on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Tuna Australia did not raise any objections or claims relating to the activity.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• Tuna Australia WA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Tuna Australia to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Western Australian Fishing Industry Council (WAFIC)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	05/09/2025-10/09/2025	002515	Email	WAFIC replied and confirmed that they have distributed the notification email and information sheet to licence holders in the below fisheries: • Pilbara Fish Trawl Managed Fishery • Mackerel Managed Fishery (Area 2) • Pilbara Line Managed Fishery • Pilbara Trap Managed Fishery • West Coast Deep Sea Crustacean Fishery. WAFIC will hold off on relaying any feedback received until the 16 October 2025.	No objection or claim raised		
	16/09/2025	002540	Email	CAPL requested WAFIC to include additional fisheries in Consultation for the EP. CAPL requested WAFIC distribute to licence holders in the below fisheries: • Pilbara Fish Trawl Managed Fishery • Mackerel Managed Fishery (Area 2) • Pilbara Line Managed Fishery	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• Pilbara Trap Managed Fishery • West Coast Deep Sea Crustacean Fishery • Exmouth Gulf Prawn Managed Fishery • Hermit Crab Fishery • Marine Aquarium Fish Managed Fishery • Nickol Bay Prawn Managed Fishery • Onslow Prawn Managed Fishery • Open Access in the North coast, Gascoyne and West Coast Bioregions • Pilbara Crab Managed Fishery • Specimen Shell Managed Fishery • West Australian Sea Cucumber (Beche-De-Mer) Fishery • North West Slope Trawl Fishery.			
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	25/09/2025	002569	Email	CAPL provided WAFIC with the latest "Bulletin," outlining CAPL ongoing Environmental Plans. The Bulletin provides a detailed overview of proposed activities, including descriptions, location maps, timing, potential impacts, and the schedule for formal consultation. CAPL encourage WAFIC to review the document and share any feedback or questions.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
	17/11/2025	002712	Email	CAPL emailed WAFIC following up on any feedback on the EP.	No objection or claim raised		
	25/11/2025	002730	Email	WAFIC notified CAPL they had missed sending information to industry. CAPL requested an email be sent with feedback to be received by 28 November 2025.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				WAFIC sent an email to industry on 25 November 2025.			
	28/11/2025	002729	Email	WAFIC confirmed no feedback was received from industry regarding the Wheatstone Start-up and Operations EP. WAFIC provided comments and questions in relation to the proposed activities. WAFIC were concerned of water quality for the Pilbara Demersal Scalefish and asked if a cumulative assessment had been done. WAFIC has concerns of anchoring in areas where marine fauna is present and requested information on anchoring plans and procedures. WAFIC requested confirmation on CAPL plans for unplanned activity.	WAFIC raised concerns and requested further clarification on: • Water quality and cumulative assessments • Anchoring • Unplanned activities.	**Claims have merit:** The input raised is considered relevant to the activity.	No change made to the EP. CAPL provided a response to WAFIC (Record ID 002731) providing clarification on all concerns raised.
	04/12/2025	002731	Email	CAPL provided WAFIC further information in response to their earlier comments. CAPL confirmed assessment on planned discharges. Due to the scope of the EP revision to include the operation of the Julimar-Brunello hydrocarbon system and it not substantially changing planned discharges, a cumulative assessment has not been included in this revision. However, it will be included in the upcoming 5 year EP revision, due for submission in mid-2027. CAPL confirmed anchoring was not a planned activity in this EP. CAPL confirmed the NOPSEMA approved OPEP and OSMP across all its assets.	No objection or claim raised		
				Summary: • CAPL commenced consultation with WAFIC on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • WAFIC raised concerns and requested further clarification regarding water quality and cumulative assessments, anchoring and unplanned activities. CAPL provided clarification on all concerns raised. • CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) Confirmed consultation information was sent to fisheries/licence holders. – (2) No feedback from fishing industry members. – (3) Wants to be included as contact in planning documents and can support as needed. – (4) Wants to confirm Woodside maintains list of WA commercial fisheries. – (5) Have a suitable OSMP in place. – (6) Requested notifications on activities. – (7) No further feedback. This input is consistent with CAPL's current approach. • CAPL has provided a reasonable period and sufficient information to WAFIC to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				any feedback provided in the future (Section 9.3.4.1).			
WA Game Fishing Association	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with WA Game Fishing Association on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • WA Game Fishing Association did not raise any objections or claims relating to the activity. • WA Game Fishing Association did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to WA Game Fishing Association to make an informed assessment of the possible consequences of the activity on			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.3.3 Tourism and recreation operators

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Apache Fishing Charters (Apache)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Apache on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				activity, including the activity description, EMBA, potential impacts and risks and control measures. • Apache did not raise any objections or claims relating to the activity. • Apache did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Apache to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Aquatic Adventure Exmouth	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Aquatic Adventure Exmouth on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Aquatic Adventure Exmouth did not raise any objections or claims relating to the activity. • Aquatic Adventure Exmouth did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Aquatic Adventure Exmouth to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Archipelago Adventures	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Archipelago Adventures on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Archipelago Adventures did not raise any objections or claims relating to the activity. • Archipelago Adventures did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Archipelago Adventures to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ashburton Anglers	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • CAPL commenced consultation with Ashburton Anglers on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ashburton Anglers did not raise any objections or claims relating to the activity. • Ashburton Anglers did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ashburton Anglers to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Blue Horizon Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Blue Horizon Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Blue Horizon Charters did not raise any objections or claims relating to the activity. • Blue Horizon Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Blue Horizon Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Blue Juice Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Blue Juice Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Blue Juice Charters did not raise any objections or claims relating to the activity. • Blue Juice Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Blue Juice Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Blue Lightning Fishing Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Blue Lightning Fishing Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Blue Lightning Fishing Charters did not raise any objections or claims relating to the activity. • Blue Lightning Fishing Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Blue Lightning Fishing Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Bluesun 2 Boat Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Text	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Bluesun 2 Boat Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Bluesun 2 Boat Charters did not raise any objections or claims relating to the activity. • Bluesun 2 Boat Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Bluesun 2 Boat Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Cape Immersion Tours	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Cape Immersion Tours on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Cape Immersion Tours did not raise any objections or claims relating to the activity. • Cape Immersion Tours did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Cape Immersion Tours to make an informed assessment of the possible			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Coastal Adventure Tours	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Coastal Adventure Tours on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Coastal Adventure Tours did not raise any objections or claims relating to the activity. • Coastal Adventure Tours did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to Coastal Adventure Tours to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Coral Bay Ecotours	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Coral Bay Ecotours on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Coral Bay Ecotours did not raise any objections or claims relating to the activity. • Coral Bay Ecotours did not raise any objections or claims during previous consultation conducted by			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Coral Bay Ecotours to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Cruise Ningaloo	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Cruise Ningaloo on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• Cruise Ningaloo did not raise any objections or claims relating to the activity. • Cruise Ningaloo did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Cruise Ningaloo to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Dampier Island Tourism	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Dampier Island Tourism on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Dampier Island Tourism did not raise any objections or claims relating to the activity. • Dampier Island Tourism did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Dampier Island Tourism to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Discovery Holiday Parks Pty Limited	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Discovery Holiday Parks Pty Limited on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions,			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Discovery Holiday Parks Pty Limited did not raise any objections or claims relating to the activity. • Discovery Holiday Parks Pty Limited did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Discovery Holiday Parks Pty Limited to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Dive Ningaloo	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • CAPL commenced consultation with Dive Ningaloo on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Dive Ningaloo did not raise any objections or claims relating to the activity. • Dive Ningaloo did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Dive Ningaloo to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Eco-Abrolhos Pty Ltd	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Eco-Abrolhos on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Eco-Abrolhos did not raise any objections or claims relating to the activity. • Eco-Abrolhos did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Eco-Abrolhos to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Evolution Fishing Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Evolution Fishing Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Evolution Fishing Charters did not raise any objections or claims relating to the activity. • Evolution Fishing Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Evolution Fishing Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Exmouth Adventure Co	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Exmouth Adventure Co on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Exmouth Adventure Co did not raise any objections or claims relating to the activity. • Exmouth Adventure Co did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Exmouth Adventure Co to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Exmouth Dive & Whalesharks Ningaloo	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Exmouth Dive & Whalesharks Ningaloo on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Exmouth Dive & Whalesharks Ningaloo did not raise any objections or claims relating to the activity. • Exmouth Dive & Whalesharks Ningaloo did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Exmouth Dive & Whalesharks Ningaloo to make an informed assessment of the possible consequences of the activity on its functions, interests and activities,			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Exmouth Dive Centre	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Exmouth Dive Centre on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Exmouth Dive Centre did not raise any objections or claims relating to the activity. • Exmouth Dive Centre did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to Exmouth Dive Centre to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Exmouth Fly Fishing	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Exmouth Fly Fishing on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Exmouth Fly Fishing did not raise any objections or claims relating to the activity. • Exmouth Fly Fishing did not raise any objections or claims during previous consultation conducted by			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Exmouth Fly Fishing to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Image Dive and Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Image Dive and Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• Image Dive and Charters did not raise any objections or claims relating to the activity. • Image Dive and Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Image Dive and Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Innkeeper Sport Fishing Charter	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Innkeeper Sport Fishing Charter on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Innkeeper Sport Fishing Charter did not raise any objections or claims relating to the activity. • Innkeeper Sport Fishing Charter did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Innkeeper Sport Fishing Charter to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Kings Ningaloo Reef Tours	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Kings Ningaloo Reef Tours on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Kings Ningaloo Reef Tours did not raise any objections or claims relating to the activity. • Kings Ningaloo Reef Tours did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Kings Ningaloo Reef Tours to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Live Ningaloo	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • CAPL commenced consultation with Live Ningaloo on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Live Ningaloo did not raise any objections or claims relating to the activity. • Live Ningaloo did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Live Ningaloo to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Mackerel Islands & Onslow Beach Resort	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Mackerel Islands & Onslow Beach Resort on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Mackerel Islands & Onslow Beach Resort did not raise any objections or claims relating to the activity. • Mackerel Islands & Onslow Beach Resort did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Mackerel Islands & Onslow Beach Resort to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Mahi Mahi Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Mahi Mahi Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Mahi Mahi Charters did not raise any objections or claims relating to the activity. • Mahi Mahi Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Mahi Mahi Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Montebello Island Safaris	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Montebello Island Safaris on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Montebello Island Safaris did not raise any objections or claims relating to the activity. • Montebello Island Safaris did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Montebello Island Safaris to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Nickol Bay Sport Fishing Club	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				and provided an information sheet and a link to CAPLs consultation webpage.			
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Nickol Bay Sport Fishing Club on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Nickol Bay Sport Fishing Club did not raise any objections or claims relating to the activity. • Nickol Bay Sport Fishing Club did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Nickol Bay Sport Fishing Club to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Aviation	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Aviation on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Aviation did not raise any objections or claims relating to the activity. • Ningaloo Aviation did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Aviation to make an informed assessment of the possible			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Blue Dive	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Blue Dive on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Blue Dive did not raise any objections or claims relating to the activity. • Ningaloo Blue Dive did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to Ningaloo Blue Dive to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Coral Bay Boats	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Coral Bay Boats on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Coral Bay Boats did not raise any objections or claims relating to the activity. • Ningaloo Coral Bay Boats did not raise any objections or claims during previous consultation			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Coral Bay Boats to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Discovery	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Discovery on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• Ningaloo Discovery did not raise any objections or claims relating to the activity. • Ningaloo Discovery did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Discovery to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Ecology Cruises	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Ecology Cruises on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Ecology Cruises did not raise any objections or claims relating to the activity. • Ningaloo Ecology Cruises did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Ecology Cruises to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Fly Fishing	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Fly Fishing on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Fly Fishing did not raise any objections or claims relating to the activity. • Ningaloo Fly Fishing did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Fly Fishing to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Glass Bottom Boat	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • CAPL commenced consultation with Ningaloo Glass Bottom Boat on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Glass Bottom Boat did not raise any objections or claims relating to the activity. • Ningaloo Glass Bottom Boat did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Glass Bottom Boat to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Marine Interaction	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Marine Interaction on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Marine Interaction did not raise any objections or claims relating to the activity. • Ningaloo Marine Interaction did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Marine Interaction to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Reef Dive	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Reef Dive on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Reef Dive did not raise any objections or claims relating to the activity. • Ningaloo Reef Dive did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Reef Dive to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Reef to Range Tours	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Reef to Range Tours on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Reef to Range Tours did not raise any objections or claims relating to the activity. • Ningaloo Reef to Range Tours did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Reef to Range Tours to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Ningaloo Safari Tours	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Safari Tours on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Safari Tours did not raise any objections or claims relating to the activity. • Ningaloo Safari Tours did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Safari Tours to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Sportfishing Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Sportfishing Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Sportfishing Charters did not raise any objections or claims relating to the activity. • Ningaloo Sportfishing Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Sportfishing Charters to make an informed assessment of the			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Visitor Centre	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Visitor Centre on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Visitor Centre did not raise any objections or claims relating to the activity. • Ningaloo Visitor Centre did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to Ningaloo Visitor Centre to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Whaleshark n Dive	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Whaleshark n Dive on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ningaloo Whaleshark n Dive did not raise any objections or claims relating to the activity. • Ningaloo Whaleshark n Dive did not raise any objections or claims during previous consultation			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Whaleshark n Dive to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ningaloo Whaleshark Swim	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ningaloo Whaleshark Swim on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• Ningaloo Whaleshark Swim did not raise any objections or claims relating to the activity. • Ningaloo Whaleshark Swim did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ningaloo Whaleshark Swim to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ocean Eco Adventures	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ocean Eco Adventures on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ocean Eco Adventures did not raise any objections or claims relating to the activity. • Ocean Eco Adventures did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ocean Eco Adventures to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ocean Charters Pty Ltd / Absolute Ocean Charters (Ocean Charters)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ocean Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ocean Charters did not raise any objections or claims relating to the activity. • Ocean Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ocean Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
On Strike Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with On Strike Charters on 4 September 2025 via formal written notification advising they had been identified as a			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • On Strike Charters did not raise any objections or claims relating to the activity. • On Strike Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to On Strike Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Peak Sportfishing Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • CAPL commenced consultation with Peak Sportfishing Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Peak Sportfishing Charters did not raise any objections or claims relating to the activity. • Peak Sportfishing Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Peak Sportfishing Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Pelican Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Pelican Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Pelican Charters did not raise any objections or claims relating to the activity. • Pelican Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Pelican Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Recfishwest	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	26/09/2025	002564	Email	Recfishwest acknowledged CAPL's emails. Recfishwest raised the presence of recreational fishers and the charter industry within the region, and requested ongoing engagement for the activity and notification in the event of an unplanned release. CAPL thanked Recfishwest for their response, noting their advice and confirmed they will assess and detail within the EP.	Recfishwest raised the presence of recreational fishers and the charter industry within the region and requested ongoing engagement for the activity.	**Claims have merit:** The feedback provided is relevant.	The presence of recreational and charter vessels is captured in Section 4.4 of the EP. The commitment to ongoing engagement and notification in the event of an unplanned release is listed in Table 9-5.
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Recfishwest on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Recfishwest did not raise any objections or claims relating to the activity. Recfishwest raised the presence of recreational fishers and the charter industry within the region, and requested ongoing engagement and notification for the activity. This is captured within the EP. • CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D:			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				– (1) Noted recreational fishers and the charter industry utilise the activity area and requested to be updated on the progress of operations. This input is consistent with CAPL's current approach. • CAPL has provided a reasonable period and sufficient information to Recfishwest to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Sail Ningaloo	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Sail Ningaloo on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				activity, including the activity description, EMBA, potential impacts and risks and control measures. • Sail Ningaloo did not raise any objections or claims relating to the activity. • Sail Ningaloo did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Sail Ningaloo to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Tourism Western Australia (TWA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with TWA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • TWA did not raise any objections or claims relating to the activity. • TWA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to TWA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Three Islands Whale Shark Tours	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Three Islands Whale Shark Tours on 4 September 2025 via formal			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Three Islands Whale Shark Tours did not raise any objections or claims relating to the activity. • Three Islands Whale Shark Tours did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Three Islands Whale Shark Tours to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Top Gun Charters	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • CAPL commenced consultation with Top Gun Charters on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Top Gun Charters did not raise any objections or claims relating to the activity. • Top Gun Charters did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Top Gun Charters to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Ultimate WaterSports	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Ultimate WaterSports on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Ultimate WaterSports did not raise any objections or claims relating to the activity. • Ultimate WaterSports did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Ultimate WaterSports to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Venture Ningaloo	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	04/09/2025	002589	Email	CAPL attempted to reach out to the relevant person however, received an undeliverable email message.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Venture Ningaloo on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Venture Ningaloo did not raise any objections or claims relating to the activity. • Venture Ningaloo did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Venture Ningaloo to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
View Ningaloo	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with View Ningaloo on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • View Ningaloo did not raise any objections or claims relating to the activity. • View Ningaloo did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to View Ningaloo to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Wilderness Island	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	05/09/2025	002536	Email	Wilderness Island provided an email response, unrelated to the EP.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Wilderness Island on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Wilderness Island did not raise any objections or claims relating to the activity. • Wilderness Island did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Wilderness Island to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Willie Creek Pearl Farm Pty Ltd	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Willie Creek Pearl Farm on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Willie Creek Pearl Farm did not raise any objections or claims relating to the activity. • Willie Creek Pearl Farm did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Willie Creek Pearl Farm to make an informed assessment of the possible			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Yardi Creek Boat Tours	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Phone	CAPL sent a follow up text requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Yardi Creek Boat Tours on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Yardi Creek Boat Tours did not raise any objections or claims relating to the activity. • Yardi Creek Boat Tours did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to Yardi Creek Boat Tours to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.3.4 Local government departments or agencies

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
City of Karratha	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with City of Karratha on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• City of Karratha did not raise any objections or claims relating to the activity. • City of Karratha did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to City of Karratha to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Gascoyne Development Commission (GDC)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with GDC on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • GDC did not raise any objections or claims relating to the activity.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• GDC did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to GDC to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Shire of Ashburton (SOA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	22/09/2025	002583	Email	SOA thanked CAPL for their email. SOA confirms that they do not have any comments or feedback.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with SOA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • SOA did not raise any objections or claims relating to the activity. • SOA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to SOA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Shire of Carnarvon (SOC)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002571	Phone	SOC called CAPL for further information on the EP. CAPL called back to discuss queries with SOC on the EP. SOC requested information on how commercial operators will be notified or how will they be affected CAPL advised in identifying relevant persons commercial operators are engaged with directly or through peak industry bodies. CAPL engage with WAFIC for fishery management area intersects with the OA, and a record of recent active fishing effort (based on DPIRD FishCube data) occurring within the OA. CAPL advised if any new relevant persons are identified by SOC then information can be passed on and any queries can come through SOC or directly to CAPL. SOC confirmed all queries were responded to and no further consultation was required.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with SOC on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • SOC did not raise any objections or claims relating to the activity. • SOC did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to SOC to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Shire of Exmouth	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	10/10/2025	002632	Email	Shire of Exmouth confirmed receipt of email.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Shire of Exmouth on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Shire of Exmouth did not raise any objections or claims relating to the activity. • Shire of Exmouth did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Shire of Exmouth to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.3.5 WA World Heritage advisory committees

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Ningaloo Coast World Heritage Advisory Committee (NCWHAC)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • CAPL commenced consultation with NCWHAC on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • NCWHAC did not raise any objections or claims relating to the activity. • NCWHAC did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to NCWHAC to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.3.6 Other Petroleum Titleholders

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
BP Developments Australia (BP)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with BP on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • BP did not raise any objections or claims relating to the activity. • CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) Noted EMBA intersects with petroleum titles. – (2) No objections or feedback. • CAPL has provided a reasonable period and sufficient information to BP to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Carnarvon Energy	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	22/09/2025	002558	Email	Carnarvon Energy replied and confirmed they have no comments or feedback on the EP.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Carnarvon Energy on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Carnarvon Energy did not raise any objections or claims relating to the activity. • CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				RI-10006, Rev 8) and incorporated into this Appendix D: – (1) No feedback on the proposed activities. – (2) Provided permission to include correspondence in EP. • CAPL has provided a reasonable period and sufficient information to Carnarvon Energy to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Eni Australia	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	04/09/2025	002534	Email	Eni Australia replied and confirmed that they have no concerns regarding the activity.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Eni Australia on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Eni Australia did not raise any objections or claims relating to the activity. • Eni Australia did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Eni Australia to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Exxon Mobil	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Exxon Mobil on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Exxon Mobil did not raise any objections or claims relating to the activity. • Exxon Mobil did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Exxon Mobil to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Jadestone Energy	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Jadestone Energy on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Jadestone Energy did not raise any objections or claims relating to the activity. • Jadestone Energy did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Jadestone Energy to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Kato Energy / Kato NWS Pty Ltd	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				proposed activities and provided an information sheet and a link to CAPLs consultation webpage.			
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Kato Energy on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Kato Energy did not raise any objections or claims relating to the activity. • Kato Energy did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Kato Energy to make an informed assessment of the possible consequences of the activity on its functions,			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Kufpec	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	19/09/2025	002543	Email	Kufpec advised they have received the information and have no further comments.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Kufpec on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Kufpec did not raise any objections or claims relating to the activity. • Kufpec did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Kufpec to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Santos	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	18/09/2025	002542	Email	Santos replied and confirmed that Santos have no objections or claims in relation to the planned activity.	No objection or claim raised		
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Santos on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Santos did not raise any objections or claims relating to the activity.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has considered the following input, objections and/or claims that were raised during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8) and incorporated into this Appendix D: – (1) No feedback. • CAPL has provided a reasonable period and sufficient information to Santos to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Shell	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	07/10/2025	002595	Email	Shell replied and acknowledged the follow-up consultation email. Shell confirmed that the email had been shared with the relevant units.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Shell on 4 September 2025 via formal written notification advising they had been identified			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Shell did not raise any objections or claims relating to the activity. • Shell did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Shell to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Western Gas	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Western Gas on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Western Gas did not raise any objections or claims relating to the activity. • Western Gas did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Western Gas to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Woodside	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	13/10/2025	002641	Email	Woodside thanked CAPL for their email, and requested clarification regarding the Petroleum Safety Zone (PSZ) information included in the information sheet.	Woodside requested clarification regarding the PSZ.	**Claim has merit:** As a relevant person, the request for clarification is considered fair and reasonable.	No change made to the EP. CAPL provided a response to Woodside (Record ID 002693)
	12/11/2025	002693	Email	CAPL thanked Woodside for their email and confirmed they have noted the comments in relation to the information sheet. CAPL provided clarification in regards to PSZs.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Woodside on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Woodside did not raise any objections or claims relating to the activity. • Woodside did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to Woodside to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.3.7 ENGOs

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Australian Marine Conservation Society (AMSC)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with AMSC on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • AMSC did not raise any objections or claims relating to the activity. • AMSC did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to AMSC to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Cape Conservation Group (CCG)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with CCG on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • CCG did not raise any objections or claims relating to the activity.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CCG did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to CCG to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Protect Ningaloo	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Protect Ningaloo on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Protect Ningaloo did not raise any objections or claims relating to the activity. • Protect Ningaloo did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Protect Ningaloo to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.3.8 Other

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Australian Institute of Marine Science (AIMS)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with AIMS on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				description, EMBA, potential impacts and risks and control measures. • AIMS did not raise any objections or claims relating to the activity. • AIMS did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to AIMS to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Australian Marine Oil Spill Centre (AMOSC)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	06/10/2025-22/10/2025	002650	Email	AMOSC replied, and outlined AMOSC's requirements for consultation. CAPL responded and clarified that the EP was a revision to include the Julimar-Brunello infrastructure in the scope of the in-force Wheatstone Start-Up and Operations EP. CAPL enquired if AMOSC would like to be considered as a Relevant Person. AMOSC responded and confirmed that they are satisfied to consult on the OPEP only, not the EP. CAPL thanked AMOSC for confirming their position regarding EP consultation	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with AMOSC on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • AMOSC did not raise any objections or claims relating to the activity. • AMOSC did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to AMOSC to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Care for Hedland Environmental Association (CFH)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/09/2025-22/09/2025	002561	Email	CFH replied and confirmed further engagement on the matter is not required.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL thanked CFH for their reply and advised consultation closed on 16th of October.			
	29/10/2025	002675	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with CFH on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • CFH did not raise any objections or claims relating to the activity. • CFH did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to CFH to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Carnarvon Chamber of Commerce (CCI)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with CCI on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • CCI did not raise any objections or claims relating to the activity. • CCI did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to CCI to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Exmouth Chamber of Commerce and Industry (ECCI)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with ECCI on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • ECCI did not raise any objections or claims relating to the activity. • ECCI did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to ECCI to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Karratha and Districts Chamber of Commerce and Industry (KDCCI)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with KDCCI on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • KDCCI did not raise any objections or claims relating to the activity. • KDCCI did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to KDCCI to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Oil Spill Response Limited (OSRL)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002586	Email	OSRL replied, confirming receipt and that they have no questions.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with OSRL on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • OSRL did not raise any objections or claims relating to the activity. • OSRL did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to OSRL to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Onslow Chamber of Commerce and Industry (OCCI)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with OCCI on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • OCCI did not raise any objections or claims relating to the activity. • OCCI did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to OCCI to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Pilbara Development Commission (PDC)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	12/09/2025	002539	Email	Notification of consultation launch sent via email to alternative email address. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002580	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with PDC on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • PDC did not raise any objections or claims relating to the activity. • PDC did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to PDC to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Telstra	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Telstra on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Telstra did not raise any objections or claims relating to the activity. • Telstra did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Telstra to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Vocus Communications	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	07/10/2025	002597	Email	Vocus replied, and advised that they had reviewed the information, and noted that at closest CAPL activities are situated over 20 km from the Vocus-owned and operated Highclere cable system. As such, Vocus has no comments on EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Vocus Communications on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Vocus Communications did not raise any objections or claims relating to the activity. • Vocus Communications did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Vocus Communications to make an informed assessment of the possible consequences of the activity on its			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.4 Regulation 25(1)(e) - Any other person or organisation that the titleholder considers relevant

1.4.1 Commercial fishery licence holders and/or representative bodies

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Pearl Producers Association	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Pearl Producers Association on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Pearl Producers Association did not raise any objections or claims relating to the activity. • Pearl Producers Association did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Pearl Producers Association to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Western Rock Lobster Council	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Western Rock Lobster Council on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Western Rock Lobster Council did not raise any objections or claims relating to the activity. • Western Rock Lobster Council did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Western Rock Lobster Council to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.4.2 Tourism and recreation operators

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Karratha Tourism and Visitor Centre	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Karratha Tourism and Visitor Centre on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Karratha Tourism and Visitor Centre did not raise any objections or claims relating to the activity. • Karratha Tourism and Visitor Centre did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Karratha Tourism and Visitor Centre to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

1.4.3 Other

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Australian Conservation Foundation (ACF)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with ACF on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • ACF did not raise any objections or claims relating to the activity. • ACF did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				• CAPL has provided a reasonable period and sufficient information to ACF to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Australian Energy Producers (AEP)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with AEP on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • AEP did not raise any objections or claims relating to the activity. • AEP did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to AEP to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Centre for Whale Research Western Australia (CWR)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with CWR on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • CWR did not raise any objections or claims relating to the activity. • CWR did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to CWR to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Conservation Council of Western Australia (CCWA)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	25/09/2025	002591	Email	CAPL provided CCWA with the latest "Bulletin," outlining CAPL ongoing Environmental Plans. The Bulletin provides a detailed overview of proposed activities, including descriptions, location maps, timing, potential impacts, and the schedule for formal consultation. CAPL encourage CCWA to review the document and share any feedback or questions.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with CCWA on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • CCWA did not raise any objections or claims relating to the activity. • CCWA did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to CCWA to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Exmouth Gulf Taskforce	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Exmouth Gulf Taskforce on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Exmouth Gulf Taskforce did not raise any objections or claims relating to the activity. • Exmouth Gulf Taskforce did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Exmouth Gulf Taskforce to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25.			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Greenpeace	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Greenpeace on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Greenpeace did not raise any objections or claims relating to the activity. • Greenpeace did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Greenpeace to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
Gascoyne Junction Community Resource Centre (GJCRJ)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with GJCRJ on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • GJCRJ did not raise any objections or claims relating to the activity. • GJCRJ did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to GJCRJ to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
International Fund for Animal Welfare (IFAW)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with IFAW on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • IFAW did not raise any objections or claims relating to the activity. • IFAW did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to IFAW to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
WA Coastal and Marine Community Network (WACMCN)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with WACMCN on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • WACMCN did not raise any objections or claims relating to the activity. • WACMCN did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to WACMCN to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
WA Marine Science Institute (WAMSI)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with WAMSI on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • WAMSI did not raise any objections or claims relating to the activity. • WAMSI did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to WAMSI to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Western Australian Museum (WAM)	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				Summary: • CAPL commenced consultation with WAM on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • WAM did not raise any objections or claims relating to the activity. • WAM did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to WAM to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Whale and Dolphin Conservation Society	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Whale and Dolphin Conservation Society on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				or activities that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Whale and Dolphin Conservation Society did not raise any objections or claims relating to the activity. • Whale and Dolphin Conservation Society did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Whale and Dolphin Conservation Society to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			
Wilderness Society	04/09/2025	002573	Email	Notification of consultation launch sent via email. CAPL provided a written notification of the proposed activities and provided an information sheet and a link to CAPLs consultation webpage.	No objection or claim raised		
	19/09/2025	002574	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	03/10/2025	002575	Email	CAPL sent a follow up email requesting feedback on the EP.	No objection or claim raised		
	21/10/2025	002646	Email	CAPL advised the consultation period for the EP has closed.	No objection or claim raised		
				Summary: • CAPL commenced consultation with Wilderness Society on 4 September 2025 via formal written notification advising they had been identified as a relevant person with functions, interests or activities			

Relevant Person	Interaction Date	Record ID	Method	Summary	Objection or Claim	Assessment of Merit	Changes made to EP in response to consultation
				that may be affected by the activity. CAPL provided an overview of the activity and link to the Consultation Hub on CAPL's website. • CAPL has presented sufficient information in accordance with Section 6.2.4 of the EP on the activity, including the activity description, EMBA, potential impacts and risks and control measures. • Wilderness Society did not raise any objections or claims relating to the activity. • Wilderness Society did not raise any objections or claims during previous consultation conducted by Woodside for the NOPSEMA accepted Julimar Operations Environment Plan (JU-00-RI-10006, Rev 8). • CAPL has provided a reasonable period and sufficient information to Wilderness Society to make an informed assessment of the possible consequences of the activity on its functions, interests and activities, CAPL has discharged its obligations under regulation 25. CAPL notes that further feedback may be received as part of ongoing consultation. CAPL will consider any feedback provided in the future (Section 9.3.4.1).			

appendix e protected matters search reports

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: 03-Sep-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	40
Listed Migratory Species:	58

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	91
Whales and Other Cetaceans:	31
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	3

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	61
Key Ecological Features (Marine):	3
Biologically Important Areas:	10
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat likely to occur within area
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 known to 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
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known 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
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
MAMMAL		
[Balaenoptera borealis](#) Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Migration route known to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
[Dasyurus hallucatus](#) Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
[Macroderma gigas](#) Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area
[Orcaella heinsohni](#) Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
[Sousa sahulensis](#) Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat known to occur within area
REPTILE		
[Aipysurus apraefrontalis](#) Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
[Aipysurus foliosquama](#) Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
SHARK		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	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
null		

Scientific Name	Threatened Category	Presence Text
[Balaenoptera omurai](#) Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
[Anous stolidus](#) Common Noddy [825]		Species or species habitat may occur within area
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat likely to occur within area
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
[Macronectes giganteus](#) Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
[Phaethon lepturus](#) White-tailed Tropicbird [1014]		Species or species habitat may occur within area
[Phaethon rubricauda](#) Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
[Sternula albifrons](#) Little Tern [82849]	Vulnerable	Breeding known to occur within area
[Thalassarche carteri](#) Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		

Scientific Name	Threatened Category	Presence Text
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	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 likely to occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat 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	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Species or species habitat 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 may occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	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 sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]	Vulnerable	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		

Scientific Name	Threatened Category	Presence Text
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
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
Pandion haliaetus		
Osprey [952]		Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

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 may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis		
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
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
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat 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 likely to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
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
Pandion haliaetus Osprey [952]		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

Scientific Name	Threatened Category	Presence Text
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	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
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
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

Scientific Name	Threatened Category	Presence Text
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Micrognathus micronotopterus		
Tidepool Pipefish [66255]		Species or species habitat may occur within area
Phoxocampus belcheri		
Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii		
Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis		
Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus		
Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus		
Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus		
Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris		
Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
Dugong dugon		
Dugong [28]		Species or species habitat known to occur within area
Reptile		
Aipysurus apraefrontalis		
Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
Aipysurus duboisii		
Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Aipysurus foliosquama](#) Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
[Aipysurus laevis](#) Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
[Aipysurus mosaicus as Aipysurus eydouxii](#) Mosaic Sea Snake [87261]		Species or species habitat may occur within area
[Aipysurus tenuis](#) Brown-lined Sea Snake, Mjoberg's Sea Snake [1121]		Species or species habitat may occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding known to occur within area
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Emydocephalus annulatus](#) Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
[Ephalophis greyae as Ephalophis greyi](#) Mangrove Sea Snake [93738]		Species or species habitat may occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
[Hydrophis czeblukovi](#) Fine-spined Sea Snake [59233]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area
Hydrophis peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
Hydrophis stokesii as Astrotia stokesii Stokes' Sea Snake [93510]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder 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 omurai](#) Omura's Whale [87136]		Species or species habitat likely to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[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

Current Scientific Name	Status	Type of Presence
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat 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

Current Scientific Name	Status	Type of Presence
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Montebello	Multiple Use Zone (IUCN VI)

Habitat Critical to the Survival of Marine Turtles [Resource Information]

Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Oct - Feb		
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Babylon 3D Marine Seismic Survey, Commonwealth Waters, nr Exmouth WA	2013/7081		Completed
DAVROS MC 3D marine seismic survey northwaet of Dampier, WA	2013/7092		Completed
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260		Completed
Gorgon Gas Development	2003/1294		Post-Approval
Project Highclere Cable Lay and Operation	2022/09203		Completed
Controlled action			
Construct and operate LNG & domestic gas plant including onshore and offshore facilities - Wheatston	2008/4469	Controlled Action	Post-Approval
Equus Gas Fields Development Project, Carnarvon Basin	2012/6301	Controlled Action	Completed
Gorgon Gas Development 4th Train Proposal	2011/5942	Controlled Action	Post-Approval
Pluto Gas Project	2005/2258	Controlled Action	Completed
Pluto Gas Project Including Site B	2006/2968	Controlled Action	Post-Approval
Proposed West Pilbara Iron Ore Project	2009/4706	Controlled Action	Post-Approval
Not controlled action			
Construction and operation of an unmanned sea platform and connecting pipeline to Varanus Island for	2004/1703	Not Controlled Action	Completed
Development of Halyard Field off the west coast of WA	2010/5611	Not Controlled Action	Completed
Exploration of appraisal wells	2006/3065	Not Controlled Action	Completed
HCA05X Macedon Experimental Survey	2004/1926	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Infill Production Well (Griffin-9)	2001/417	Not Controlled Action	Completed
Klammer 2D Seismic Survey	2002/868	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Subsea Gas Pipeline From Stybarrow Field to Griffin Venture Gas Export Pipeline	2005/2033	Not Controlled Action	Completed
Thevenard Island Retirement Project	2015/7423	Not Controlled Action	Completed
To construct and operate an offshore submarine fibre optic cable, WA	2014/7373	Not Controlled Action	Completed
Wanda Offshore Research Project, 80 km north-east of Exmouth, WA	2018/8293	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
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 Surveys - Contos CT-13 & Supertubes CT-	2013/6901	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
13, offshore WA		(Particular Manner)	
3D seismic survey	2006/2715	Not Controlled Action (Particular Manner)	Post-Approval
Aperio 3D Marine Seismic Survey, WA	2012/6648	Not Controlled Action (Particular Manner)	Post-Approval
Balnaves Condensate Field Development	2011/6188	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
Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P	2007/3647	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
Foxhound 3D Non-Exclusive Marine Seismic Survey	2009/4703	Not Controlled Action (Particular Manner)	Post-Approval
Harmony 3D Marine Seismic Survey	2012/6699	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
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
John Ross & Rosella Off Bottom Cable Seismic Exploration Program	2008/3966	Not Controlled Action (Particular Manner)	Post-Approval
Julimar Brunello Gas Development Project	2011/5936	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 Survey	2005/2017	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
Pomodoro 3D Marine Seismic Survey in WA-426-P and WA-427-P	2010/5472	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
Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R	2006/2609	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Warramunga Non-Inclusive 3D Seismic Survey	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
West Anchor 3D Marine Seismic Survey	2008/4507	Not Controlled Action (Particular Manner)	Post-Approval
West Panaeus 3D seismic survey	2006/3141	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone 3D MAZ Marine Seismic Survey	2011/6058	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2008/4134	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2007/3941	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Bianchi 3D Marine Seismic Survey, Carnavon Basin, WA	2013/7078	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
Continental Slope Demersal Fish Communities	North-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Marine Turtles		
Chelonia mydas Green Turtle [1765]	Internesting buffer	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting buffer	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting buffer	Known to occur
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Seabirds		
Ardenna tenuirostris Short-tailed Shearwater [84292]	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
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 28-Aug-2025

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:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	60
Listed Migratory Species:	69

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	79
Commonwealth Heritage Places:	2
Listed Marine Species:	112
Whales and Other Cetaceans:	33
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	9
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:	33
Regional Forest Agreements:	None
Nationally Important Wetlands:	2
EPBC Act Referrals:	216
Key Ecological Features (Marine):	6
Biologically Important Areas:	34
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
Natural		
The Ningaloo Coast	WA	Listed place

Commonwealth Marine Area	[Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species		[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Malurus leucopterus edouardi White-winged Fairy-wren (Barrow Island), Barrow Island Black-and-white Fairy-wren [26194]	Vulnerable	Species or species habitat likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding known 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
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
CRUSTACEAN		

Scientific Name	Threatened Category	Presence Text
Kumonga exleyi		
Cape Range Remipede [86875]	Vulnerable	Species or species habitat likely to occur within area
FISH		
Milyeringa justitia		
Barrow Cave Gudgeon [86867]	Endangered	Species or species habitat known to occur within area
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
MAMMAL		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Bettongia lesueur Barrow and Boodie Islands subspecies		
Boodie, Burrowing Bettong (Barrow and Boodie Islands) [88021]	Vulnerable	Species or species habitat known to occur within area
Dasyurus hallucatus		
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isoodon auratus barrowensis		
Golden Bandicoot (Barrow Island) [66666]	Vulnerable	Species or species habitat known to occur within area
Lagorchestes conspicillatus conspicillatus		
Spectacled Hare-wallaby (Barrow Island) [66661]	Vulnerable	Species or species habitat known to occur within area
Lagorchestes hirsutus Central Australian subspecies		
Mala, Rufous Hare-Wallaby (Central Australia) [88019]	Endangered	Translocated population known to occur within area
Macroderma gigas		
Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat known to occur within area
Osphranter robustus isabellinus		
Barrow Island Wallaroo, Barrow Island Euro [89262]	Vulnerable	Species or species habitat likely to occur within area
Petrogale lateralis lateralis		
Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat known to occur within area
Pseudomys fieldi		
Shark Bay Mouse, Djoongari, Alice Springs Mouse [113]	Vulnerable	Species or species habitat likely to occur within area
Rhinonicteris aurantia (Pilbara form)		
Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area
Sousa sahulensis		
Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat known to occur within area
REPTILE		
Aipysurus apraefrontalis		
Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Ctenotus zastictus Hamelin Ctenotus [25570]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
SHARK		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Congregation or aggregation known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[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
null		
[Balaenoptera omurai](#)		
Omura's Whale [87136]		Species or species habitat likely to occur within area
Migratory Marine Birds		
[Anous stolidus](#)		
Common Noddy [825]		Species or species habitat likely to occur within area
[Apus pacificus](#)		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
[Ardenna carneipes](#)		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
[Ardenna pacifica](#)		
Wedge-tailed Shearwater [84292]		Breeding known to occur within area
[Calonectris leucomelas](#)		
Streaked Shearwater [1077]		Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
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
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons Little Tern [82849]	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
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area

Migratory Marine Species

Scientific Name	Threatened Category	Presence Text
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat known to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	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
Carcharias taurus Grey Nurse Shark [64469]		Congregation or aggregation known 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

Scientific Name	Threatened Category	Presence Text
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		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

Scientific Name	Threatened Category	Presence Text
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
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]	Endangered	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]	Vulnerable	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

Scientific Name	Threatened Category	Presence Text
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
[Charadrius veredus](#) Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
[Glareola maldivarum](#) Oriental Pratincole [840]		Species or species habitat may occur within area
[Limnodromus semipalmatus](#) Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat known to occur within area

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
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area
Thalasseus bergii		
Greater Crested Tern [83000]		Breeding known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Defence	
Defence - EXMOUTH ADMIN & HF TRANSMITTING [50127]	WA
Defence - EXMOUTH ADMIN & HF TRANSMITTING [50128]	WA
Defence - EXMOUTH ADMIN & HF TRANSMITTING [50124]	WA
Defence - EXMOUTH ADMIN & HF TRANSMITTING [50126]	WA
Defence - EXMOUTH ADMIN & HF TRANSMITTING [50129]	WA
Defence - EXMOUTH ADMIN & HF TRANSMITTING [50125]	WA
Defence - EXMOUTH VLF TRANSMITTER STATION [50122]	WA
Defence - EXMOUTH VLF TRANSMITTER STATION [50123]	WA
Defence - LEARMONTH - AIR WEAPONS RANGE [50193]	WA
Defence - LEARMONTH - RAAF BASE [50106]	WA
Defence - LEARMONTH - RAAF BASE [50107]	WA
Defence - LEARMONTH - RAAF BASE [50101]	WA
Defence - LEARMONTH - RAAF BASE [50105]	WA

Commonwealth Land Name	State
Defence - LEARMONTH - RAAF BASE [50097]	WA
Defence - LEARMONTH - RAAF BASE [50102]	WA
Defence - LEARMONTH - RAAF BASE [50108]	WA
Defence - LEARMONTH - RAAF BASE [50103]	WA
Defence - LEARMONTH - RAAF BASE [50100]	WA
Defence - LEARMONTH - RAAF BASE [50109]	WA
Defence - LEARMONTH RADAR SITE - TWIN TANKS EXMOUTH [50002]	WA
Defence - LEARMONTH RADAR SITE - VLAMING HEAD EXMOUTH [50001]	WA
Defence - LEARMONTH TRANSMITTING STATION [50239]	WA
Unknown	
Commonwealth Land - [52102]	WA
Commonwealth Land - [52101]	WA
Commonwealth Land - [52100]	WA
Commonwealth Land - [51887]	WA
Commonwealth Land - [51884]	WA
Commonwealth Land - [51477]	WA
Commonwealth Land - [51476]	WA
Commonwealth Land - [51460]	WA
Commonwealth Land - [51462]	WA
Commonwealth Land - [51461]	WA
Commonwealth Land - [52109]	WA
Commonwealth Land - [51463]	WA
Commonwealth Land - [52098]	WA
Commonwealth Land - [52099]	WA
Commonwealth Land - [52097]	WA
Commonwealth Land - [52198]	WA

Commonwealth Land Name	State
Commonwealth Land - [52106]	WA
Commonwealth Land - [51104]	WA
Commonwealth Land - [51474]	WA
Commonwealth Land - [51471]	WA
Commonwealth Land - [51473]	WA
Commonwealth Land - [52107]	WA
Commonwealth Land - [52104]	WA
Commonwealth Land - [52105]	WA
Commonwealth Land - [51445]	WA
Commonwealth Land - [51448]	WA
Commonwealth Land - [52110]	WA
Commonwealth Land - [50385]	WA
Commonwealth Land - [52108]	WA
Commonwealth Land - [51449]	WA
Commonwealth Land - [52236]	WA
Commonwealth Land - [52103]	WA
Commonwealth Land - [51475]	WA
Commonwealth Land - [51444]	WA
Commonwealth Land - [51443]	WA
Commonwealth Land - [51442]	WA
Commonwealth Land - [51447]	WA
Commonwealth Land - [51446]	WA
Commonwealth Land - [52195]	WA
Commonwealth Land - [51472]	WA
Commonwealth Land - [51469]	WA
Commonwealth Land - [51467]	WA
Commonwealth Land - [51466]	WA

Commonwealth Land Name	State
Commonwealth Land - [51465]	WA
Commonwealth Land - [51464]	WA
Commonwealth Land - [51468]	WA
Commonwealth Land - [51470]	WA
Commonwealth Land - [51455]	WA
Commonwealth Land - [51454]	WA
Commonwealth Land - [51457]	WA
Commonwealth Land - [51459]	WA
Commonwealth Land - [51452]	WA
Commonwealth Land - [51458]	WA
Commonwealth Land - [51451]	WA
Commonwealth Land - [51456]	WA
Commonwealth Land - [51453]	WA
Commonwealth Land - [51450]	WA

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Natural		
Learmonth Air Weapons Range Facility	WA	Listed place
Ningaloo Marine Area - Commonwealth Waters	WA	Listed place

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna 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]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area
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 likely to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat 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
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
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
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
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
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding known to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		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

Scientific Name	Threatened Category	Presence Text
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely 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
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Breeding known to 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

Scientific Name	Threatened Category	Presence Text
[Thalasseus bergii as Sterna bergii](#) Greater Crested Tern [83000]		Breeding known to occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Fish		
[Acentronura larsonae](#) Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
[Bulbonaricus brauni](#) Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
[Campichthys 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

Scientific Name	Threatened Category	Presence Text
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
Dugong dugon Dugong [28]		Breeding known to occur within area
Reptile		
Aipysurus apraefrontalis Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus duboisii Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus laevis Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
Aipysurus mosaicus as Aipysurus eydouxii Mosaic Sea Snake [87261]		Species or species habitat may occur within area
Aipysurus tenuis Brown-lined Sea Snake, Mjoberg's Sea Snake [1121]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
Ephalophis greyae as Ephalophis greyi Mangrove Sea Snake [93738]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis czeblukovi Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
Hydrophis major as Disteira major Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area
Hydrophis peronii as Acalyptophis peronii Horned Sea Snake [93509]		Species or species habitat may occur within area
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
Hydrophis stokesii as Astrotia stokesii Stokes' Sea Snake [93510]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
[Balaenoptera bonaerensis](#) Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
[Balaenoptera borealis](#) Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat likely to occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Migration route known to occur within area
[Balaenoptera omurai](#) Omura's Whale [87136]		Species or species habitat likely to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
[Feresa attenuata](#) Pygmy Killer Whale [61]		Species or species habitat may occur within area
[Globicephala macrorhynchus](#) Short-finned Pilot Whale [62]		Species or species habitat may occur within area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Park Name	Zone & IUCN Categories
Carnarvon Canyon	Habitat Protection Zone (IUCN IV)

Park Name	Zone & IUCN Categories
Gascoyne	Habitat Protection Zone (IUCN IV)
Argo-Rowley Terrace	Multiple Use Zone (IUCN VI)
Gascoyne	Multiple Use Zone (IUCN VI)
Montebello	Multiple Use Zone (IUCN VI)
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		[Resource Information]
Scientific Name	Behaviour	Presence
All year (Jun - Aug)		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Nov-Feb		
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur
Oct - Feb		
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Oct - Mar		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Airlie Island	Nature Reserve	WA
Barrow Island	Nature Reserve	WA
Barrow Island	Marine Park	WA
Barrow Island	Marine Management Area	WA

Protected Area Name	Reserve Type	State
Bessieres Island	Nature Reserve	WA
Boodie, Double Middle Islands	Nature Reserve	WA
Bundegi Coastal Park	5(1)(h) Reserve	WA
Burnside And Simpson Island	Nature Reserve	WA
Cape Range	National Park	WA
Cape Range (South)	National Park	WA
Giralia	NRS Addition - Gazettal in Progress	WA
Gnandaroo Island	Nature Reserve	WA
Jurabi Coastal Park	5(1)(h) Reserve	WA
Locker Island	Nature Reserve	WA
Lowendal Islands	Nature Reserve	WA
Montebello Islands	Conservation Park	WA
Montebello Islands	Conservation Park	WA
Montebello Islands	Marine Park	WA
Muiron Islands	Nature Reserve	WA
Muiron Islands	Marine Management Area	WA
Ningaloo	Marine Park	WA
Rocky Island	Nature Reserve	WA
Round Island	Nature Reserve	WA
Serrurier Island	Nature Reserve	WA
Tent Island	Nature Reserve	WA
Thevenard Island	Nature Reserve	WA
Thevenard Island	Nature Reserve	WA
Unnamed WA40322	5(1)(h) Reserve	WA
Unnamed WA44665	5(1)(h) Reserve	WA
Victor Island	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Whalebone Island	Nature Reserve	WA
Whitmore,Roberts,Doole Islands And Sandalwood Landing	Nature Reserve	WA
Y Island	Nature Reserve	WA

Nationally Important Wetlands

[Resource Information]

Wetland Name	State
Cape Range Subterranean Waterways	WA
Exmouth Gulf East	WA

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
3D Seismic Survey in the Carnarvon Bsin on the North West Shelf	2002/778		Completed
Ashburton Infrastructure Project	2021/9064		Completed
Babylon 3D Marine Seismic Survey, Commonwealth Waters, nr Exmouth WA	2013/7081		Completed
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
DAVROS MC 3D marine seismic survey northwaet of Dampier, WA	2013/7092		Completed
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260		Completed
Development of Mutineer and Exeter petroleum fields for oil production, Permit	2003/1033		Completed
Gorgon Gas Development	2003/1294		Post-Approval
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed
Ningaloo Lighthouse Development, 17km north west Exmouth, Western Australia	2020/8693		Post-Approval
Project Highclere Cable Lay and Operation	2022/09203		Completed
Single Jetty Deep Water Port Renewable Hub, WA	2021/8942		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
Action clearly unacceptable			
Highlands 3D Marine Seismic Survey	2012/6680	Action Clearly Unacceptable	Completed
Controlled action			
'Van Gogh' Petroleum Field Development	2007/3213	Controlled Action	Post-Approval
Construct and operate LNG & domestic gas plant including onshore and offshore facilities - Wheatston	2008/4469	Controlled Action	Post-Approval
Construction and operation of a Solar Salt Project, SW Onslow, WA	2016/7793	Controlled Action	Assessment Approach
Develop Jansz-Io deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-	2005/2184	Controlled Action	Post-Approval
Development of Angel gas and condensate field, North West Shelf	2004/1805	Controlled Action	Post-Approval
Development of 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 4th Train Proposal	2011/5942	Controlled Action	Post-Approval
Gorgon Gas Revised Development	2008/4178	Controlled Action	Post-Approval
Greater Enfield (Vincent) Development	2005/2110	Controlled Action	Post-Approval
Greater Gorgon Development - Optical Fibre Cable, Mainland to Barrow Island	2005/2141	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Learmonth Bundle Site and Launchway, WA	2017/8079	Controlled Action	Completed
Light Crude Oil Production	2001/365	Controlled Action	Post-Approval
Nava-1 Cable System	2001/510	Controlled Action	Completed
Pluto Gas Project	2005/2258	Controlled Action	Completed
Pluto Gas Project Including Site B	2006/2968	Controlled Action	Post-Approval
Proposed West Pilbara Iron Ore Project	2009/4706	Controlled Action	Post-Approval
Pyrenees Oil Fields Development	2005/2034	Controlled Action	Post-Approval
Simpson Development	2000/59	Controlled Action	Completed
Simpson Oil Field Development	2001/227	Controlled Action	Post-Approval
The Scarborough Project - FLNG & assoc subsea infrastructure, Carnarvon Basin	2013/6811	Controlled Action	Post-Approval
Vincent Appraisal Well	2000/22	Controlled Action	Post-Approval
Yannarie Solar Salt Project	2004/1679	Controlled Action	Completed
Yardie Creek Road Realignment Project	2021/8967	Controlled Action	Assessment Approach
Not controlled action			
'Goodwyn A' Low Pressure Train Project	2003/914	Not Controlled Action	Completed
'Van Gogh' Oil Appraisal Drilling Program, Exploration Permit Area WA-155-P(1)	2006/3148	Not Controlled Action	Completed
Airlie Island soil and groundwater investigations, Exmouth Gulf, offshore Pilbara coast	2014/7250	Not Controlled Action	Completed
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Baniyas-1 Exploration Well, EP-424, near Onslow	2007/3282	Not Controlled Action	Completed
Barrow Island 2D Seismic survey	2006/2667	Not Controlled Action	Completed
Bollinger 2D Seismic Survey 200km North of North West Cape WA	2004/1868	Not Controlled Action	Completed
Bultaco-2, Laverda-2, Laverda-3 and Montesa-2 Appraisal Wells	2000/103	Not Controlled Action	Completed
Carnarvon 3D Marine Seismic Survey	2004/1890	Not Controlled Action	Completed
Cazadores 2D seismic survey	2004/1720	Not Controlled Action	Completed
Construct 110km buried natural gas pipeline from Onslow, connecting to Dampier/Bunbury natural gas p	2013/7039	Not Controlled Action	Completed
Construction and operation of an unmanned sea platform and connecting pipeline to Varanus Island for	2004/1703	Not Controlled Action	Completed
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
Differential Global Positioning System (DGPS)	2001/445	Not Controlled Action	Completed
Drilling of an exploration well Gats-1 in Permit Area WA-261-P	2004/1701	Not Controlled Action	Completed
Eagle-1 Exploration Drilling, North West Shelf, WA	2019/8578	Not Controlled Action	Completed
Echo A Development WA-23-L, WA-24-L	2005/2042	Not Controlled Action	Completed
Exploration drilling well WA-155-P(1)	2003/971	Not Controlled Action	Completed
Exploration of appraisal wells	2006/3065	Not Controlled Action	Completed
Exploration Well (Taunton-2)	2002/731	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Exploration Well in Permit Area WA-155-P(1)	2002/759	Not Controlled Action	Completed
Exploratory drilling in permit area WA-225-P	2001/490	Not Controlled Action	Completed
Extension of Simpson Oil Platforms & Wells	2002/685	Not Controlled Action	Completed
Gulf Fishing Lodge	2010/5499	Not Controlled Action	Completed
HCA05X Macedon Experimental Survey	2004/1926	Not Controlled Action	Completed
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
Mahimahi Aquaculture Facility	2002/891	Not Controlled Action	Completed
Maia-Gaea Exploration wells	2000/17	Not Controlled Action	Completed
Manaslu - 1 and Huascaran - 1 Offshore Exploration Wells	2001/235	Not Controlled Action	Completed
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
Onslow Power Infrastructure Upgrade Project, Onslow, WA	2014/7314	Not Controlled Action	Completed
Onslow Water Supply Infrastructure Upgrade Project, Onslow, WA	2014/7329	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Pipeline System Modifications Project	2000/3	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Searipple gas and condensate field development	2000/89	Not Controlled Action	Completed
Spool Base Facility	2001/263	Not Controlled Action	Completed
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
Thevenard Island Retirement Project	2015/7423	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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
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 Manner)	Post-Approval
2D Seismic Survey	2005/2146	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey Permit Area WA-352-P	2008/4628	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey within permit WA-291	2007/3265	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey	2008/4281	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey (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	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
3D seismic survey	2006/2715	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, WA	2008/4428	Not Controlled Action (Particular Manner)	Post-Approval
3D sesmic survey	2006/2781	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval
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
Balnaves Condensate Field Development	2011/6188	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
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
Cerberus exploration drilling campaign, Carnarvon Basin, WA	2016/7645	Not Controlled Action (Particular Manner)	Post-Approval
CGGVERITAS 2010 2D Seismic Survey	2010/5714	Not Controlled Action (Particular Manner)	Post-Approval
Charon 3D Marine Seismic Survey	2007/3477	Not Controlled Action (Particular Manner)	Post-Approval
Consturction & operation of the Varanus Island kitchen & mess cyclone refuge building, compression p	2013/6952	Not Controlled Action (Particular Manner)	Post-Approval
Coverack Marine Seismic Survey	2001/399	Not Controlled Action (Particular Manner)	Post-Approval
Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval
CVG 3D Marine Seismic Survey	2012/6654	Not Controlled Action (Particular Manner)	Post-Approval
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
Demeter 3D Seismic Survey, off Dampier, WA	2002/900	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
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
Earthworks for kitchen/mess, cyclone refuge building & Compression Plant, Varanus Island	2013/6900	Not Controlled Action (Particular Manner)	Post-Approval
Eendracht Multi-Client 3D Marine Seismic Survey	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
Effect of marine seismic sounds to demersal fish and pearl oysters, north-west WA	2018/8169	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M3 & Vincent 4D Marine Seismic Surveys	2008/3981	Not Controlled Action (Particular Manner)	Completed
Enfield M3 4D, Vincent 4D & 4D Line Test Marine Seismic Surveys	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M4 4D Marine Seismic Survey	2008/4558	Not Controlled Action (Particular Manner)	Post-Approval
Enfield oilfield 3D Seismic Survey	2006/3132	Not Controlled Action (Particular 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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Fletcher-Finucane Development, WA26-L and WA191-P	2011/6123	Not Controlled Action (Particular Manner)	Post-Approval
Foxhound 3D Non-Exclusive Marine Seismic Survey	2009/4703	Not Controlled Action (Particular Manner)	Post-Approval
Gazelle 3D Marine Seismic Survey in WA-399-P and WA-42-L	2010/5570	Not Controlled Action (Particular Manner)	Post-Approval
Geco Eagle 3D Marine Seismic Survey	2008/3958	Not Controlled Action (Particular Manner)	Post-Approval
Glencoe 3D Marine Seismic Survey WA-390-P	2007/3684	Not Controlled Action (Particular Manner)	Post-Approval
Greater Western Flank Phase 1 gas Development	2011/5980	Not Controlled Action (Particular Manner)	Post-Approval
Grimalkin 3D Seismic Survey	2008/4523	Not Controlled Action (Particular Manner)	Post-Approval
Guacamole 2D Marine Seismic Survey	2008/4381	Not Controlled Action (Particular Manner)	Post-Approval
Harmony 3D Marine Seismic Survey	2012/6699	Not Controlled Action (Particular Manner)	Post-Approval
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	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
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
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
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 Manner)	Post-Approval
Offshore Canning Multi Client 2D Marine Seismic Survey	2010/5393	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Drilling Campaign	2011/5830	Not Controlled Action (Particular Manner)	Post-Approval
Onslow Seawater Desalination Plant Marine Geophysical Investigation	2020/8794	Not Controlled Action (Particular Manner)	Post-Approval
Orcus 3D Marine Seismic Survey in WA-450-P	2010/5723	Not Controlled Action (Particular Manner)	Post-Approval
Osprey and Dionysus Marine Seismic Survey	2011/6215	Not Controlled Action (Particular Manner)	Post-Approval
Palta-1 exploration well in Petroleum Permit Area WA-384-P	2011/5871	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
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
Reindeer gas reservior development, Devil Creek, Carnarvon Basin - WA	2007/3917	Not Controlled Action (Particular Manner)	Post-Approval
Rose 3D Seismic Program	2008/4239	Not Controlled Action (Particular Manner)	Post-Approval
Rydal-1 Petroleum Exploration Well, WA	2012/6522	Not Controlled Action (Particular Manner)	Post-Approval
Salsa 3D Marine Seismic Survey	2010/5629	Not Controlled Action (Particular Manner)	Post-Approval
Santos Winchester three dimensional seismic survey - WA-323-P & WA-330-P	2011/6107	Not Controlled Action (Particular Manner)	Post-Approval
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Stag 4D & Reindeer MAZ Marine Seismic Surveys, WA	2013/7080	Not Controlled Action (Particular Manner)	Post-Approval
Stag Off-bottom Cable Seismic Survey	2007/3696	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow 4D Marine Seismic Survey	2011/5810	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow Baseline 4D marine seismic survey	2008/4530	Not Controlled Action (Particular Manner)	Post-Approval
Tantabiddi Boat Ramp Sand Bypassing	2015/7411	Not Controlled Action (Particular Manner)	Post-Approval
Tidepole Maz 3D Seismic Survey Campaign	2007/3706	Not Controlled Action (Particular Manner)	Post-Approval
Tortilla 2D Seismic Survey, WA	2011/6110	Not Controlled Action (Particular Manner)	Post-Approval
Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R	2006/2609	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a 3D marine seismic survey	2010/5695	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5679	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5715	Not Controlled Action (Particular Manner)	Post-Approval
Vincent M1 and Enfield M5 4D Marine Seismic Survey	2010/5720	Not Controlled Action (Particular	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
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 Marine Seismic Survey in the offshore northwest Carnarvon Basin	2011/6175	Referral Decision	Completed
3D Seismic Survey	2008/4219	Referral Decision	Completed
Bianchi 3D Marine Seismic Survey, Carnavon Basin, WA	2013/7078	Referral Decision	Completed
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

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Stybarrow Baseline 4D Marine Seismic Survey (Permit Areas WA-255-P, WA-32-L, WA-	2008/4165	Referral Decision	Completed
Two Dimensional Transition Zone Seismic Survey - TP/7 (R1)	2010/5507	Referral Decision	Completed
Varanus Island Compression Project	2012/6698	Referral Decision	Completed

Key Ecological Features [Resource Information]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Ancient coastline at 125 m depth contour	North-west
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	North-west
Commonwealth waters adjacent to Ningaloo Reef	North-west
Continental Slope Demersal Fish Communities	North-west
Exmouth Plateau	North-west
Glomar Shoals	North-west

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dugong		
Dugong dugon Dugong [28]	Breeding	Known to occur
Dugong dugon Dugong [28]	Calving	Known to occur
Dugong dugon Dugong [28]	Foraging (high density seagrass beds)	Known to occur
Dugong dugon Dugong [28]	Nursing	Known to occur
Marine Turtles		

Scientific Name	Behaviour	Presence
Caretta caretta Loggerhead Turtle [1763]	Internesting buffer	Known to occur
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur
Chelonia mydas Green Turtle [1765]	Aggregation	Known to occur
Chelonia mydas Green Turtle [1765]	Basking	Known to occur
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting buffer	Known to occur
Chelonia mydas Green Turtle [1765]	Mating	Known to occur
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Foraging	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting buffer	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Mating	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur

Scientific Name	Behaviour	Presence
Natator depressus Flatback Turtle [59257]	Aggregation	Known to occur
Natator depressus Flatback Turtle [59257]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting buffer	Known to occur
Natator depressus Flatback Turtle [59257]	Mating	Known to occur
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Seabirds		
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	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 brevicauda Pygmy Blue Whale [81317]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Resting	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

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-Office of Environment and Heritage, New South Wales
-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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