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gorgon gas development

pipeline and subsea infrastructure installation and pre-commissioning 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 EP summary for public disclosure, as required by regulations 35(6) and 35(7), this *Gorgon Gas Development Pipeline and Subsea Infrastructure Installation and Pre-Commissioning Environment Plan Summary* (Table 1-1) has been prepared from material provided in this EP, and in the EP summary statement format preferred by NOPSEMA (Ref. 1)..

Table 1-1: Environment Plan summary

Regulation	EP summary material requirements	Relevant section of EP
35(7)(a)(i)	the location of the activity	Sections 2.2 and 3.1.1
35(7)(a)(ii)	describes the receiving environment	Section 4
35(7)(a)(iii)	describes the activity	Section 3
35(7)(a)(iv)	details the environmental impacts and risks	Section 7
35(7)(a)(v)	summarises the control measures for the activity	Section 7
35(7)(a)(vi)	summarises the arrangements for ongoing monitoring of the titleholder's environmental performance	Section 8
35(7)(a)(vii)	summarises the response arrangements in the oil pollution emergency plan	Section 7.17; Ref. 2
35(7)(a)(viii)	details the consultation already undertaken, and plans for ongoing consultation	Section 6
35(7)(a)(ix)	details the titleholder's nominated liaison for the activity	Section 2.4

2 introduction

2.1 Overview

On behalf of the Gorgon Joint Venturers, Chevron Australia Pty Ltd (CAPL) is developing and operating the Gorgon Gas Development. To date, the Gorgon Gas Development hydrocarbon system includes infrastructure and activities associated with the Gorgon Foundation Project (GFP) and Gorgon Stage 2 (GS2). Existing infrastructure includes offshore production wells within the Gorgon and Jansz–Io gas fields, and the Feed Gas Pipelines. The Feed Gas Pipelines gather and transport gas to the Gorgon Gas Treatment Plant (GTP) on Barrow Island.

To maintain gas supply to the Gorgon GTP, and sustain current production rates, CAPL plans to install a Subsea Compression Station (SCSt) and associated infrastructure at the Jansz–Io fields. Jansz–Io Compression (J-IC) involves the installation of a SCSt, Subsea Compression Manifold Station (SCMS), a floating Field Control Station (FCS) at the Jansz-Io field, medium voltage (MV) power and communication umbilicals between the FCS and SCSt, an MV power and communications umbilical between the FCS and the existing Jansz Central Distribution Unit (CDU), and a High Voltage Submarine Cable (HVSC) between Barrow Island and the FCS.

This EP documents the assessment and management of potential environmental impacts and risks associated with the installation and pre-commissioning of the J-IC infrastructure in Commonwealth waters.

This EP has been prepared in accordance with the requirements of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (OPGGS Act) and the OPGGS(E)R, as administered, and is submitted to the National Offshore Petroleum Safety and Environment Management Authority (NOPSEMA) for regulatory acceptance.

2.2 Location

The Jansz–Io gas fields are within production licenses WA-36-L, WA-39-L, and WA-40-L, ~200 km off the north-west coast of Western Australia (WA), and in water depths of ~1,350 m (Figure 2-1). The infrastructure to be installed under this EP will be located in geographical areas within the footprints of WA-19-PL and WA-39-L.

Detailed information regarding the location and layout of infrastructure is included in Section 3.

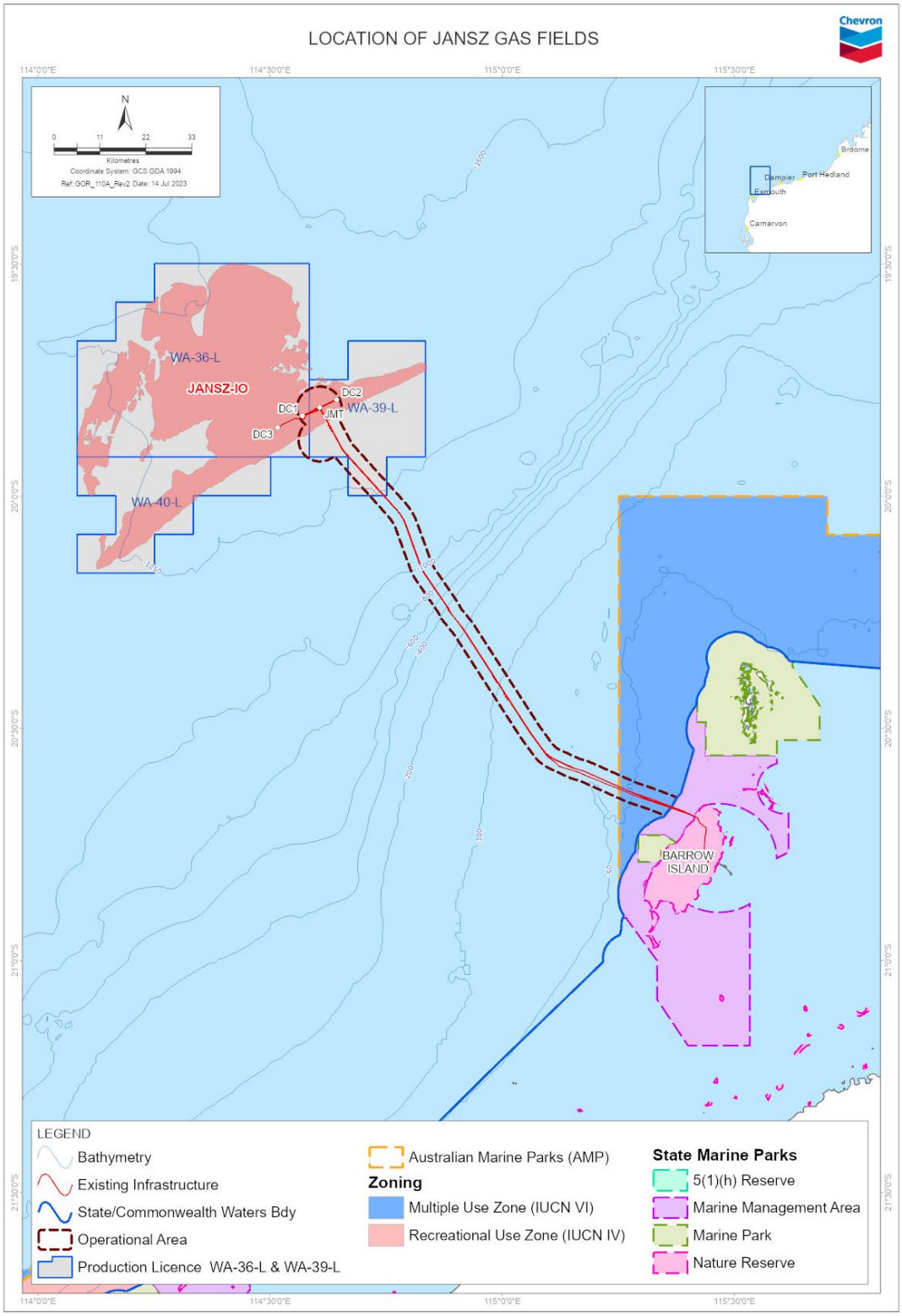


Figure 2-1: Location of Jansz–Io gas fields

2.3 Scope

2.3.1 In scope

This EP addresses activities in Commonwealth waters associated with the modification of the Gorgon Gas Development though the installation of J-IC infrastructure (the 'petroleum activity'). Specifically, this EP addressed the following activities:

- installation and offshore hook-up of the FCS, HVSC, SCSt, SCMS, and MV umbilicals
- pre-commissioning, commissioning, and start-up of the FCS—includes testing and start-up of the HVSC, MV umbilicals, and FCS equipment and systems
- pre-commissioning of the SCSt—includes pressurisation, and testing of the SCSt, SCMS, and associated subsea equipment
- IMR required prior to operations commencing
- use of vessels, helicopters, and remotely operated vehicles (ROVs) or autonomous underwater vehicles (AUVs) as required in support of the above activities.

2.3.2 Out of scope

The following activities are excluded from the scope of this EP:

- installation and pre-commissioning activities associated with the GFP, completed in accordance with the NOPSEMA-accepted *Offshore Feed Gas Pipeline System Installation Management Plan*[1] (Ref. 4)
- installation and pre-commissioning activities associated with GS2, completed in accordance with the previous revision (Rev 3.0) of the NOPSEMA-accepted *Pipeline and Subsea Infrastructure Installation and Pre-commissioning Environment Plan* (Ref. 5)
- installation and pre-commissioning activities associated with J-IC within State waters, which are covered under the DEMIRS-accepted *Gorgon and Jansz Feed Gas Pipeline Umbilicals Installation Environment Plan* (Ref. 6)
- commissioning, start-up, and operation of the SCSt, SCMS and associated subsea equipment, which will be covered under a revision to the existing NOPSEMA-accepted *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan* (Ref. 7)
- commissioning, start-up, and operation activities within State waters which are covered under the DEMIRS-accepted *Gorgon and Jansz Feed Gas Pipeline Operations Environment Plan (State)* (Ref. 8)
- vessels (including emergency response vessels) transiting to or from the operational area (OA) (i.e. transiting outside of the OA); these vessels are deemed to be operating under the *Navigation Act 2012* (Cth) and not performing the petroleum activity

[1] Activities under this EP have been completed and the notification of completion has been accepted by NOPSEMA as per the requirements of regulation 25A of the OPGGS(E)R 2009 (regulations in place at the time).

- helicopters transiting to or from the OA (i.e. transiting outside of the OA); these aircraft are subject to the *Air Navigation Act 1920* (Cth), *Civil Aviation Act 1988* (Cth), and associated regulations, and not performing the petroleum activity
- end of facility life (EOFL) decommissioning and removal of infrastructure under section 572(3) of the OPGGS Act; these activities are not scheduled to occur within the in-force period of this EP[2].

2.4 Titleholder details

CAPL is the nominated titleholder of WA-19-PL and WA-39-L, on behalf of the titleholder companies listed in Table 2-1. The contact details for the titleholders' nominated liaison for this EP are listed in Table 2-2.

Regulation 23(3) of the OPGGS(E)R requires that CAPL notifies NOPSEMA of a change in the titleholder, a change to the titleholders nominated liaison, or a change in the contact details for either the titleholder or the nominated liaison.

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.

Table 2-1: Titleholder details

Title	Details	Titleholders	Nominated Titleholder	Address
WA-19-PL	Pipeline Licence	Chevron Australia Pty Ltd Mobil Australia Resources Company Pty Limited Shell Australia Pty Ltd Osaka Gas Gorgon Pty Ltd Tokyo Gas Gorgon Pty Ltd JERA Gorgon Pty Ltd	Chevron Australia Pty Ltd (ACN: 086 197 757)	1 The Esplanade Perth, WA, 6000
WA-39-L	Production Licence	Chevron Australia Pty Ltd Mobil Australia Resources Company Pty Limited Shell Australia Pty Ltd Osaka Gas Gorgon Pty Ltd Tokyo Gas Gorgon Pty Ltd JERA Gorgon Pty Ltd	Chevron Australia Pty Ltd (ACN: 086 197 757)	1 The Esplanade Perth, WA, 6000

Table 2-2: Nominated liaison

Position	HSE Team Lead – Regulatory Affairs
Company	Chevron Australia Pty Ltd
ABN	086 197 757
Business address	1 The Esplanade, Perth WA 6000
Telephone number	+61 8 9216 4000
Email	feedback@chevron.com

[2] The preliminary planning for decommissioning for the J-IC assets is described in Section 3.6.

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 8.

2.5.1 Environmental policy

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

2.5.2 Relevant requirements

In accordance with regulation 21(4) of the OPGGS(E)R, the legislative requirements and other requirements that apply to the petroleum activity and are relevant to the environmental management of the activity are provided in Table 2-3 and Table 2-4.

The SCSt will generate low frequency continuous (non-impulsive) sound emissions during operations. The procedures and processes implemented during the design phases of the J-IC Project to ensure the operating phase is consistent with all relevant regulatory requirements relevant to subsea sound emissions, including the requirements of the OPGGS Act, are described in appendix f.

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. 2)
Biosecurity Act 2015 Biosecurity Regulations 2016	This Act is about managing diseases and pests that may cause harm to human, animal, or plant health or the environment. The Act provides for managing biosecurity risks in Australia and its external territories. It also provides for managing risks related to ballast water.	Pre-arrival reporting (PAR) before arrival in Australian territory	Section 7.8
		Ballast water management plans and certificates, and reporting of ballast water discharges	Section 7.8
Environment Protection and Biodiversity	Provides for the protection and management of nationally and	The EP must describe matters protected under Part 3 of the EPBC Act and assess	Sections 4, and 7

Legislation	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
Conservation Act 1999 (EPBC Act) EPBC Regulations 2000	internationally important flora, fauna, ecological communities, and heritage places	any impacts and risks to these protected matters	
		EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans	Sections 7.2, 7.6, and 7.7
		Injury or fatality caused to EPBC listed fauna shall be reported	Section 8.4.2
		The Jansz–Io Deepwater Gas Field Development was approved with conditions under the EPBC Act in 2006. There are two approval conditions under EPBC 2005/2184: Condition 3 which relates to the requirement for an accepted EP to be in place before commencing decommissioning • Condition 8 which relates to the commencement of the Jansz–Io Deepwater Gas Field Development (this requirement has been met and is considered completed).	No decommissioning is scheduled to occur during the in-force period of this EP. However, the approach to decommissioning for the J-IC assets is described in Section 3.6.
Navigation Act 2012 Various marine orders	Provides standards regarding collision prevention for vessels. The Navigation 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	Notice to Mariners	Sections 7.1, and 7.15
		Marine Order 27— Safety of navigation and radio equipment	Sections 7.1, and 7.15
		Marine Order 28— Operations and standards	Sections 7.1, and 7.15
		Marine Order 30— Prevention of collisions	Sections 7.1, 7.5, and 7.15

Legislation	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met
	Safety of Life at Sea (SOLAS).		
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	Sections 7.9, 7.14, 7.15, and 7.16
		Marine Order 95—Marine pollution prevention —garbage	Sections 7.9, and 7.13
		Marine Order 96—Marine pollution prevention —sewage	Section 7.9
		Marine Order 97—Marine pollution prevention—air pollution	Section 7.4
		Marine Order 98—Marine pollution prevention—Anti-Fouling Systems	Section 7.8
OPGGS Act OPGGS(E)R	The OPGGS(E)R under the OPGGS Act requires a titleholder to have an accepted EP in place prior to the commencement of a petroleum activity. The regulations ensure the petroleum activity is undertaken in an ecologically sustainable manner and 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. 2), and Operational and Scientific Monitoring Plan (OSMP) (Ref. 3)
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	Sections 4, and 7

Table 2-4: Standards and guidelines relevant to this activity

Standard / guideline	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met in this EP
Australian Ballast Water Management Requirements (Ref. 9)	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 (unless an exemption applies).	Section 7.8

Standard / guideline	Description	Requirements relevant to the risks associated with the petroleum activity	Demonstration of how requirements are met in this EP
	align to the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004 (the Ballast Water Management Convention).		
Australian Biofouling Management Requirements (Ref. 10)	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 PAR, and having biofouling management plans.	Section 7.8
Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Ref. 11)	International Maritime Organization (IMO) guidelines for global management of biofouling	Requires a biofouling management plan and record book to be available and maintained	Section 7.8
National Biofouling Management Guidance for the Petroleum Production and Exploration Industry (Ref. 12)	Commonwealth guidance document has been developed to assist industry manage the risk of marine pest translocation and introduction via biofouling.	Requires biofouling risk assessments to be completed	Section 7.8
National Light Pollution Guidelines for Wildlife (Ref. 13)	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 7.5

3 description of the petroleum activity

3.1 Overview

This section provides a description of the petroleum activity as required under regulation 21(1) of the OPGGS(E)R. The description of the petroleum activity is presented in the following sections:

- installation and offshore hook-up of the FCS, HVSC, SCSt, SCMS, and MV umbilicals (Section 3.2)
- pre-commissioning, commissioning, and start-up of the FCS—includes testing and start-up of the HVSC, MV umbilicals, and FCS equipment and systems (Section 3.3.1)
- pre-commissioning of the SCSt—includes pressurisation, and testing of the SCSt, SCMS, and associated subsea equipment (Section 3.3.2)
- IMR required prior to operations commencing (Section 3.4)
- use of vessels, helicopters, and ROVs or AUVs as required in support of the above activities (Section 3.5).

3.1.1 Operational area

The location of the Jansz–Io gas fields and the Feed Gas Pipeline system is described in Section 2.2 and shown in Figure 2-1.

The OA for the petroleum activity (Figure 3-1) is defined as:

- a 5 km corridor centred over the Jansz–Io pipeline within Commonwealth waters (i.e. 2.5 km either side of pipeline) terminating at the Jansz Midline Pipeline Termination Structure (MPTS)
- a 5 km radius buffer around the indicative location of each of the SCSt, SCMS, and FCS.

It is within this OA that the petroleum activity, defined within Section 3 of this EP, will be undertaken.

The OA encompasses a 500 m safety exclusion zone that will be requested around vessels undertaking installation activities for the duration of activities.

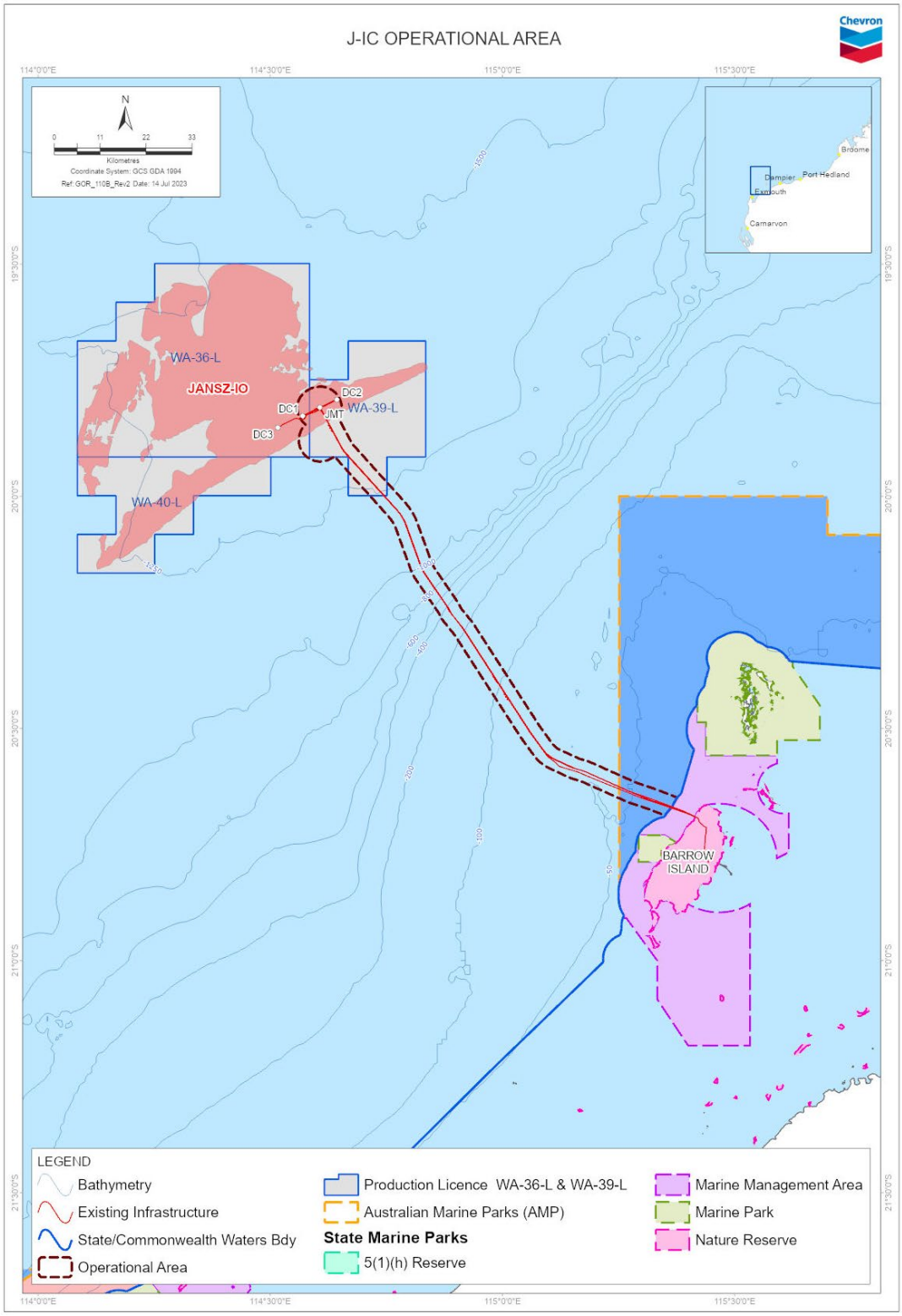


Figure 3-1: Operational area for the J-IC installation EP

3.1.2 Timing

The petroleum activity is scheduled to occur from mid-2024 to mid-2026 (Table 3-2). This timing is indicative and subject to potential delays caused by

weather events, vessel and/or equipment availability, regulatory approvals, and other unforeseen factors.

Activities covered by this EP may be conducted 24 hours a day, 7 days a week.

3.1.3 Infrastructure

An overview of the J-IC field layout is provided in Figure 3-2, with indicative locations of key infrastructure summarised in Table 3-1. J-IC comprises of the following key components:

- a SCSt to separate, compress, and pump the production fluids
- a SCMS and subsea tie in spools to allow connection of the SCSt to the existing Jansz MPTS and accommodate potential future tie-ins
- a barrier fluid flying lead (BFFL) to supply barrier fluids[3] to the SCSt from the existing Jansz CDU.
- a floating FCS to support the power and control requirements of the SCSt along with supporting power and control requirements for existing GFP and GS2 infrastructure and some provision for potential future tie-ins
- a HVSC to transmit power and communications from Barrow Island to the FCS
- MV umbilicals to transmit MV power and communications between the FCS and SCSt
- MV umbilical to transmit MV power and communications between the FCS and the existing Jansz CDU.

Table 3-1: Indicative infrastructure locations and indicative water depths

Infrastructure	Latitude^	Longitude^	Approximate dimensions*	Approximate water depth
SCSt	19°48’35.00” S	114°36’20.84” E	w: 61 m l: 67 m h: 20.7 m	1,345 m
SCMS	19°48’32.44” S	114°36’20.24” E	w: 30.0 m l: 40.0 m h: 8.4 m	1,345 m
FCS	19°52’43.67”S	114°36’28.91”E	w: 83.3 m l: 83.3 m h: 51.0 m	1,290 m
HVSC	From State waters boundary to FCS (refer to Figure 3-2)		l: 130,000 m d: 0.2 m	~25–1,290 m
MV umbilicals	From FCS to SCSt (refer to Figure 3-2)		l: 10,200 m d: 0.2 m	1,290–1,345 m
MV umbilical	From FCS to Jansz CDU		l: 13,300 m d: 0.2m	1,290–1,350 m

^ *Coordinates provided in GDA94.*
* *Dimensions (w–width; l–length; h–height; d–diameter)*

[3] Barrier fluids used will be a water-based hydraulic fluid.

Table 3-2: Approximate activity schedule

Activity group	Activity	EP Section	Approximate location^	Indicative number of vessels	Approximate timing#	Approximate duration*
Installation Campaign 1 (2024–2025)						
Installation (FCS)	FCS pre-installation survey, wave rider buoy installation, and acoustic positioning equipment installation	Sections 3.2.1.1, 3.2.1.2, and 3.2.1.3	FCS	1 x IMR vessel	September/October 2024	~30 days
Installation (SCSt and SCMS)	SCSt and SCMS pre-installation survey	Section 3.2.3.1	SCSt and SCMS			
Installation (FCS)	Suction pile installation	Section 3.2.1.4	FCS	1 x heavy lift vessel (HLV) 1 x tug 1 x cargo barge	Between November and December 2024 (FCS and SCSt/SCMS installation activities undertaken sequentially; there is only one HLV in use)	~30 days
Installation (SCSt and SCMS)	Installation of mudmats and foundations for the SCSt, SCMS and wet parking structure	Section 3.2.3.3	SCSt and SCMS	1 x HLV 1 x heavy transport vessel (HTV)		~30 days
	Installation of infield crossings	Section 3.2.3.8	Jansz in-field umbilicals and pipelines	1 x HLV	December 2024 (completed before or after mudmats, foundations, and wet parking structure installation)	~7 days
Installation and Pre-commissioning Campaign 2 (2025–2026)						
Installation (HVSC)	Installation of shallow water crossings	Section 3.2.2.1	HSVC route (see Table 3-3)	1 x light construction vessel (LCV)	Between September 2025 and January 2026	~30 days
Installation (FCS)	Acoustic positioning equipment installation	Section 3.2.1.3	FCS	1 x IMR vessel	October 2025	~10 days
Installation (SCSt)		Section 3.2.3.2	SCSt and SCMS			

Activity group	Activity	EP Section	Approximate location^	Indicative number of vessels	Approximate timing#	Approximate duration*
Installation (FCS)	Mooring line installation	Section 3.2.1.5	FCS	1 x LCV 1 x tug 1 x cargo barge	Between November 2025 and January 2026 (FCS installation activities undertaken sequentially; there is only one LCV in use)	~60 days
	FCS installation	Section 3.2.1.6	FCS	1 x LCV 5 x tugs 1 x accommodation support vessel (ASV)		
Installation (SCSt)	Installation of SCSt process modules, and sliding spools	Sections 3.2.3.4 and 3.2.3.5	SCSt and SCMS	1 x HLV 1 x LCV 1 x HTV	Between November 2025 and February 2026 (SCSt installation activities undertaken sequentially; there is only one HLV and LCV in use)	~90 days
	Installation of flying leads	Section 3.2.3.6	SCSt, SCMS, Jansz MPTS, and Jansz CDU	1 x LCV	Between February and April 2026 (SCSt installation activities undertaken sequentially; there is only one HLV and LCV in use)	~14 days
	Installation of seabed spools	Section 3.2.3.7	SCSt, SCMS, and Jansz MPTS	1 x HLV 1 x LCV 2 x HTVs		~50 days
	Installation of infield crossings	Section 3.2.3.8	Jansz in-field umbilicals and pipelines	1 x HLV		~7 days
	Installation of MV umbilicals	Section 3.2.3.9	MV umbilical routes	1 x HLV		~30 days
	Retrofit insulation installation	Section 3.2.3.10	Jansz export spool	1 x LCV	Between April and May 2026	~30 days

Activity group	Activity	EP Section	Approximate location^	Indicative number of vessels	Approximate timing#	Approximate duration*
					(SCSt installation activities undertaken sequentially; there is only one LCV in use)	
	Post-installation survey	Section 3.2.3.11	SCSt, SCMS, Jansz MPTS, and Jansz CDU	1 x LCV	Between November 2025 and April 2026 (SCSt installation activities undertaken sequentially; there is only one LCV in use)	~10 days
Pre-commissioning (SCSt and SCMS)	Nitrogen pressurisation, barrier testing, leak testing, and isolation	Section 3.3.2	SCSt and SCMS	1 x LCV	Between November 2025 and April 2026 (completed after SCSt and SCMS installation)	~90 days
Installation (HVSC)	HVSC pre-lay survey	Section 3.2.2.2	HSVC route	1 x cable lay vessel (CLV)	Between January and March 2026	~7 days
	HVSC lay	Section 3.2.2.3				~30 days
	HVSC as-laid survey	Section 3.2.2.4			Between February and May 2026 (completed after cable-lay)	~15 days
	Trenching (secondary stabilisation), including as-trenched survey	Sections 3.2.2.5 and 3.2.2.6	Between ~KP 70.6 and ~KP 99.6	1 x CLV or LCV	Between February and May 2026	~21 days
	Rock dumping (secondary stabilisation)	Section 3.2.2.7	Between State waters boundary and ~KP 99.6	1 x rock installation vessel	Between February and June 2026	~65 days
	HVSC hook-up to FCS	Section 3.2.2.8	FCS	1 x LCV	Between February and May 2026	~14 days
	HVSC post-lay survey	Section 3.2.2.9	HVSC route	1 x LCV or IMR vessel	Between March and July 2026	~7 days

Activity group	Activity	EP Section	Approximate location^	Indicative number of vessels	Approximate timing#	Approximate duration*
					(completed after rock dumping secondary stabilisation)	
Pre-commissioning (FCS)	FCS pre-commissioning, commissioning, start-up	Section 3.3.1	FCS	1 x ASV	Between May and July 2026 (completed after HVSC hook-up to FCS)	~60 days
Pre-commissioning (SCSt)	SCSt pre-commissioning	Section 3.3.2	SCSt	1 x LCV vessel	Between July and September 2026 (completed after FCS pre-commissioning)	~120 days
IMR						
IMR	IMR (if required)	Section 3.4	As required	1 x IMR vessel	As required	As required

^ *Indicative locations of FCS, SCSt, SCMS, HVSC route and MV umbilical routes are provided in Table 3-1.*

Not all vessels will remain in the OA for the provided duration. For example transport/supply vessels (e.g. tugs, cargo barges, HTVs) may be on-site for shorter durations than construction/installation vessels (e.g. HLVs, LCV) for the same scope of work.

* *Timing and durations shown in the table are approximate only, and subject to changes in schedule caused by weather events, vessel availability, and other unforeseen factors.*

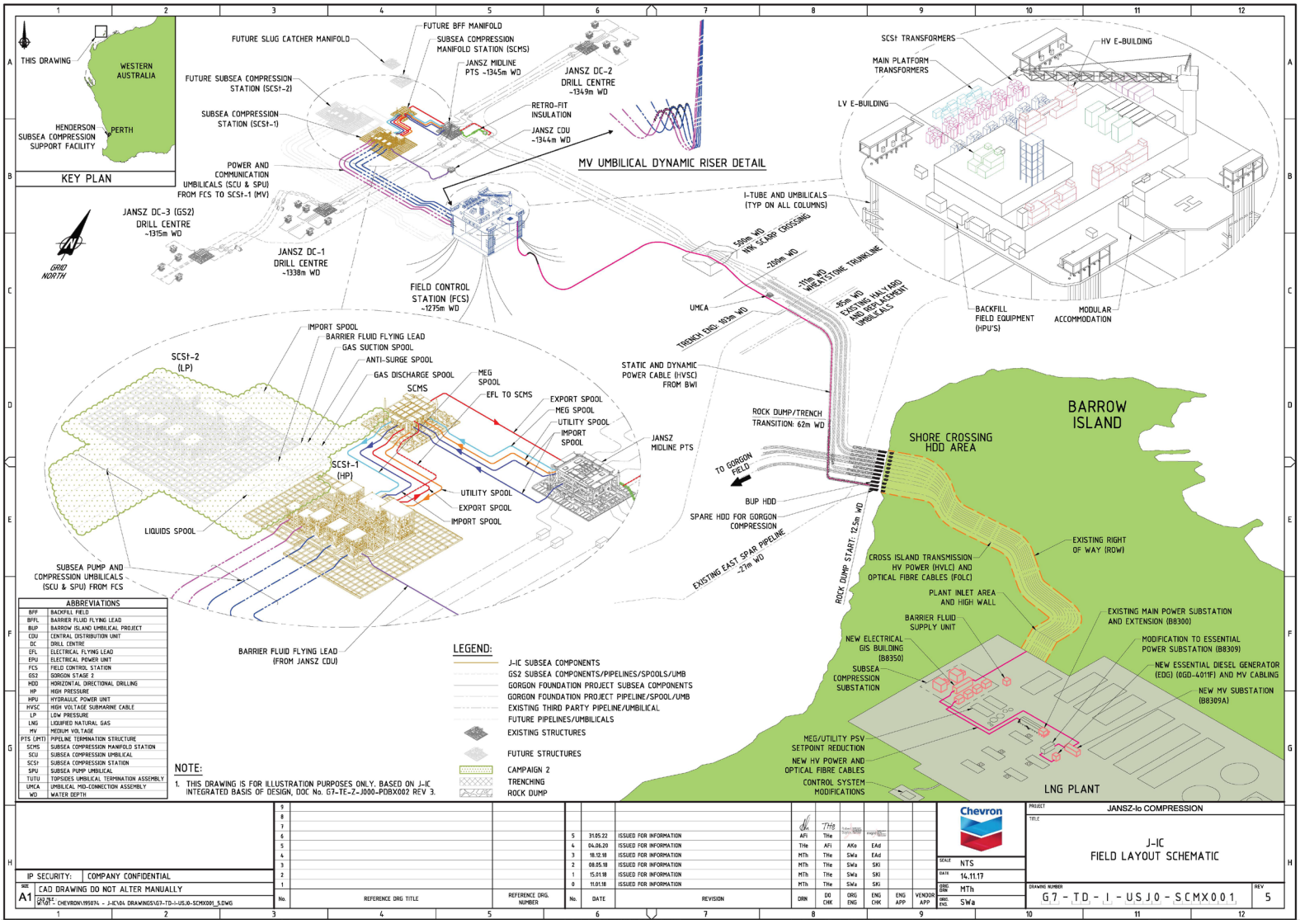


Figure 3-2: Schematic of J–IC field layout

3.2 Installation

3.2.1 Field control station

The FCS will be located ~7.5 km south of the existing Jansz MPTS in a water depth of ~1,290 m, and will host electrical and control equipment to support operation of the SCSt. The FCS also includes provision for supporting power and control requirements for existing GFP and GS2 infrastructure, and for future electrohydraulic control and power for potential future tie-ins. The FCS is designed as a normally unattended installation, however accommodation for campaign maintenance will be available.

The FCS includes:

- topside electrical equipment including high voltage (HV) main transformers and MV and low voltage (LV) distribution transformers
- HV/LV electrical buildings on the FCS, housing variable speed drives for compressors and pumps, electrical distribution equipment, control and telecommunication equipment
- MV power transmission and control system which connects the FCS to the SCSt via umbilicals containing MV cores and fibre optics
- MV power transmission and control system which connects the FCS to the existing Jansz CDU via an umbilical containing MV cores and fibre optics
- temporary diesel storage and diesel generators (i.e. for power use prior to start-up of the HVSC)
- permanent diesel storage and diesel generator for back-up power (e.g. during emergencies)
- an electrical crane.

Power and communications are transmitted from BWI via a HVSC (Section 3.2.2).

The FCS is not a hydrocarbon facility, and as such hydrocarbons will not flow to or from the FCS, or be processed onboard the FCS.

Sewage (macerated, but untreated) and grey water may be discharged while the FCS is attended during pre-commissioning, commissioning, and start-up (Section 3.3.1), as well as during any campaign maintenance (Section 3.4). Any other discharges, such as deck integrated fire fighting system (DIFFS) water and foam[4], or deck wash-water will drain direct to the ocean.

Once installed, a 500 m petroleum safety zone (under the OPGGS Act) will be requested for the FCS, which will remain in place while the FCS is within the offshore area.

3.2.1.1 Pre-installation survey

A pre-installation survey of the FCS mooring locations will be undertaken to confirm the bathymetric profile and identify any debris for removal.

If a significant obstruction is encountered at the proposed mooring locations, these may be amended around the obstruction if practicable (but still within the OA as described in this EP).

[4] Note: The fire-fighting foams selected for use on the FCS will be fluorine-free.

The pre-installation survey may involve visual inspections and/or use of acoustic survey techniques (such as multibeam echo sounder [MBES], side scan sonar [SSS] etc.) via an ROV. MBES use multiple acoustic signals to detect the seabed to measure bathymetry and water depth. SSS uses acoustic pulses that are reflected off the sea floor to create an image of seabed topography and differences in seabed texture.

3.2.1.2 Metocean data

Wave rider buoys equipped with metocean data acquisition, processing, and transmission systems may also be deployed to support installation activities. This equipment will be retrieved following the completion of installation activities under this EP.

3.2.1.3 Acoustic positioning

An array of long baseline (LBL) transponders that provide accurate positioning information may be installed on the seabed (as required) to support FCS mooring installation activities.

LBL systems work by emitting short pulses of medium to high frequency sound. Transmissions are not continuous but consist of short ‘chirps’ when active and do not emit any sound when on standby.

This equipment will be retrieved following the completion of installation activities under this EP.

3.2.1.4 Suction piles

The FCS will be permanently moored in place with a polyester and chain mooring system fastened to suction piles.

Twelve suction piles will be installed from a construction vessel with heavy lift capability. The estimated footprint of each suction pile is ~50 m^2.

If there is any rejection of the piles during the suction aided penetration process, the affected suction pile may be extracted and re-installed at an adjacent contingency location.

Suction pile mooring installation is expected to take ~30 days (Table 3-2).

3.2.1.5 Mooring lines

Mooring lines will be clustered in groups; four clusters with three mooring lines in each (i.e. 12 mooring lines in total). Each mooring line consists of a platform top chain, connection chain, multiple polyester rope segments, multiple bottom chain segments and associated mooring connectors connecting the segments. The mooring system is secured to the seafloor with suction piles (Section 3.2.1.4).

Mooring line installation may occur either at the same time as the suction piles or at another time prior to the arrival of the FCS to the field. If they are installed with the suction piles, the mooring lines will be wet-stored on the seabed until required for hook-up to the FCS. The wet stored mooring lines may require temporary stabilisation There may also be a requirement for deployment of additional temporary stabilisation to assist with achieving the required mooring line lay route. All stabilisation will be removed during hook-up operations.

3.2.1.6 FCS

The FCS has a semi-submersible hull comprising four columns and a ring pontoon.

The FCS will be wet towed to location and mooring lines will be connected and tensioned. The tensioning system consists of four temporary movable chain jacks with underwater fairlead chain stoppers, with one jack and one associated hydraulic power unit at each column.

The FCS will be ballasted to operational draft prior to the commencement of wet tow; however, ballast water exchange may be required once the FCS is on location within the OA.

Installation of the FCS (including mooring lines) is expected to take ~60 days (Table 3-2). Installation activities will be supported by various vessels including a HLV, tugs, cargo barge , and an ASV with a walk-to-work (WTW) link to the FCS.

3.2.2 High voltage submarine cable

The HVSC contains three high voltage (~115 kV) electrical cores and three fiber-optic elements. The HVSC has steel armour wire with a HDPE outer sheath; with an outer diameter of ~200 mm. Within scope of this EP, the HVSC extends ~130 km between the State waters boundary (~25 m water depth) to the FCS (~1,290 m water depth).

The HVSC will be installed to the south of, and broadly parallel to, the proposed additional Gorgon umbilical, at a nominal separation distance of ~35 m. The route crosses over the East Spar pipeline (Section 3.2.2.1) and continues in a north-westerly direction past the inner and outer reef regions which are characterized by higher relief cemented features. Once the route is beyond ~60 m water depth, the seabed becomes relatively flat and featureless and minimal deviations are necessary. At ~72 m water depth, the route crosses the Gorgon pipeline, and thereafter continues in a north-northwesterly direction broadly in parallel to the existing Jansz umbilical until it reaches the FCS location.

3.2.2.1 Shallow water crossing

The route for the HVSC crosses eight existing and one proposed pipelines or umbilicals (Table 3-3). Shallow water crossings will be constructed with either concrete mattresses, concrete bridges, modular protection assemblies attached to the cable, and/or grout bags around this existing infrastructure.

Installation of the shallow water crossings is expected to take ~30 days (Table 3-2) using a LCV. An ROV may be used by the vessel during installation for visual inspections and/or placement assistance.

Table 3-3: HVSC route crossings

Name	Easting^	Northing^	Kilometre point (KP)*	Water depth (m LAT)#
East Spar pipeline	327 926	7 713 841	120.9	~26
Proposed additional Gorgon umbilical	303 248	7 723 255	94.38	~72
Existing Gorgon umbilical	303 239	7 723 292	94.33	~72
Gorgon production trunkline	303 163	7 723 611	94.0	~72

Name	Easting^	Northing^	Kilometre point (KP)*	Water depth (m LAT)#
Gorgon MEG pipeline	303 138	7 723 714	93.9	~72
Gorgon utility pipeline	303 125	7 723 770	93.83	~72
Halyard umbilical	296 944	7 732 028	83.4	~83
Halyard replacement umbilical (RU-1)	297 072	7 731 824	83.7	~83
Wheatstone trunkline	289 019	7 744 351	68.7	~111

^ Coordinates provided in GDA94 for nominal locations to nearest metre.
** For the HVSC KP 0 is taken from the FCS End Riser Interface point. The offshore HDD exit is at ~ KP 128.*
 # LAT = Lowest Astronomical Tide

3.2.2.2 Pre-lay survey

A pre-lay survey of the HVSC route (or selected parts of the route) may be undertaken prior to cable lay commencing to confirm the bathymetric profile and identify any debris.

If a significant obstruction is encountered along the HVSC route, the alignment may be amended around the obstruction if practicable (but still within the OA as described in this EP).

The pre-lay survey may involve visual inspection and/or use of acoustic survey techniques (such as MBES, SSS etc.) via an ROV.

3.2.2.3 Cable lay

The HVSC will be laid directly on the seabed by the CLV. Touch down monitoring via an ROV will be used throughout the cable lay. The HVSC may be installed either toward or from the FCS location.

While not planned, if operational or technical issues occur for works associated with the State waters and onshore cable installation scope (Ref. 6), a contingency allowance for temporary wet storage of ~5 km of the HVSC at the State water boundary is being carried within this EP. This contingency lay-down would likely occur by forming a loop along the route seaward of the State waters boundary, within the OA. Similarly, if the FCS is delayed, whilst not planned, the HVSC would be laid either in a ~2 km temporary loop near the FCS location, outside the mooring laydown area or straight through the FCS mooring pattern. The HVSC end would then be recovered and tied into the FCS utilising a different construction vessel following FCS mooring hookup.

If adverse weather beyond the CLVs operation limits is encountered, normal cable laying will be slowed. The vessel need to continually adjust the touch down location of the HVSC to hinder fatigue damage. The vessel will maintain the touch down location within the lay corridor. . Once adverse weather conditions have passed, the cable will be recovered to the vessel to the point where it deviated from the lay route. At this point the CLV will restart lay along the planned route and complete installation.

Cable lay for the HVSC is expected to take ~30 days (Table 3-2).

3.2.2.4 As-laid survey

The as-laid survey may be conducted concurrently with cable lay (Section 3.2.2.3) or as a separate survey pass using the ROV. The as-laid survey will involve acoustic survey techniques (such as MBES or SSS) via an ROV along the full extent of the HVSC route.

3.2.2.5 Secondary stabilisation (trenching)

The HSVC will be stabilised by trenching (via water jetting) to a target burial depth of ~1 m (to top of cable), between ~KP 70.6 and ~KP 99.6. Where the HVSC route occurs over rock outcrops, trenching via jetting is not expected to achieve target burial depth. In these areas rock stabilization and/or concrete mattresses may be used.

Trenching will be undertaken by the CLVs/LCVs onboard jetting system. Trenching stabilisation is expected to take ~21 days (Table 3-2).

3.2.2.6 As-trenched survey

The as-trenched survey may be conducted concurrently with trenching activities (Section 3.2.2.4) or as a separate survey pass using the ROV. A cable tracking survey sensor, acoustic survey equipment (such as MBES or SSS) and multiple cameras will be utilised on the jetting system and/or the ROV to complete the as-trenched survey of the HVSC. An electrical voltage will be passed through the HVSC to assist cable depth sensing in a process called “toning”. A tone generator will be located onshore and a temporary cable may be deployed in State Waters to establish a circuit (out of the scope of this EP).

3.2.2.7 Secondary stabilisation (rock dumping)

Rock dumping is planned between the State waters boundary and ~KP 99.6, and may also be used at the shallow water crossings (Section 3.2.2.1) and other areas that were unable to be stabilised via trenching (Section 3.2.2.4). Concrete mattresses may also be used at the crossings for stabilisation as required.

The nearshore rock berms are expected to have a height above the seabed of ~1.5 m and width of ~9 m. The offshore rock berms for pipeline and umbilical crossings are estimated at ~3 m height and ~16 m width.

A pre- and post-rock dumping survey will be undertaken; this may involve visual inspection and acoustic survey techniques (such as MBES) via an ROV. The MBES on the ROV will also be used during the rock installation for monitoring purposes.

Rock-dumping stabilisation is expected to take ~65 days (Table 3-2) using a specialised subsea rock installation vessel, noting that this duration accounts for multiple trips to and from site (with infield activities within the OA typically only lasting for ~2 days at a time).

On fall-pipe vessels, the rocks are loaded into a pipe running through the water column (‘fall-pipe’) to contain the rock and to control the rock placement footprint. The quantity of rocks placed is controlled by varying the speed of the conveyor belt used to transport the rocks from the vessel into the fall-pipe and the tracking speed of the vessel distributing the rocks over the HVSC. The rock installation vessel may make several passes over the HVSC to achieve the desired berm profile.

In shallower water depths, side-cast vessels may be used for rock placement. On the side-cast vessel, the rocks are loaded onto the deck holds. Each vessel typically has a mechanical system that releases the rocks over the side of the vessel, above the waterline. On site, the vessel will be positioned with the side of the vessel parallel to the HVSC to be covered. The rocks will be released from a single point over the side of the vessel and will freefall to the seabed. The quantity of rocks placed is controlled by the amount pushed over the side at any one time. In between drops, the vessel will be repositioned at the next section of HVSC to be covered.

3.2.2.8 Hook-up to FCS

The HVSC will be tied into the FCS in a “Lazy-Wave” formation with buoyancy modules. The HVSC will be hauled into an I-Tube on the FCS using a pull-in winch located on the FCS. The HVSC will be transferred from the CLV (or other construction vessel) via a handshake to the pull-in winch. After pull-through, the HVSC will be jointed and terminated (spliced) to the FCS cable. Offshore hook-up to the FCS is expected to take ~14 days (Table 3-2).

3.2.2.9 Post-lay survey

A post-lay survey may be conducted as required. Similar to the pre-lay survey (Section 3.2.2.2), this may involve visual inspection and acoustic survey techniques (such as MBES or SSS) via an ROV.

3.2.3 Subsea compression station and subsea compression manifold station

The SCSt comprises multiple equipment modules positioned onto a module support frame (MSF), which rests on three foundation mudmats. Each of the modules are tied together via sliding spools. Power, control, and preservation is handled by electrical flying leads (EFLs), optical flying leads (OFLs) and hydraulic flying leads (HFLs).

The SCSt will be installed to separate, compress, and pump the production fluids. The SCSt functionality includes:

- inlet gas/liquid separation and cooling
- gas compression and aftercooling
- liquids pumping and export
- utilities including controls, electrical transformers, MEG and barrier fluid handling
- foundation and support structures.

The SCMS is a simple (no control system) manifold located between the SCSt and existing Jansz infrastructure The SCMS is based on components from the GFP MPTS. The SCMS contains piping, EFLs, corrosion probe sensor, structural steel, connection systems and ROV operable valves.

The SCMS functionality includes provision for:

- pigging of the existing Jansz pipeline, MEG pipeline, and utility pipeline
- connection of the SCSt production import and export headers to the existing Jansz MPTS
- connection of the SCSt MEG and utility headers to the existing Jansz MPTS

- connection points for potential future tie-ins
- manifold and subsea slug catcher.

The SCSt and SCMS will be in water depths of ~1,345 m.

The campaign incorporating the installation of the mudmats and foundations, SCMS, and infield crossings is estimated at ~37 days (Table 3-2).

The campaign incorporating the installation of the SCSt process modules, sliding and seabed spools, infield crossings, flying leads, MV umbilicals (between FCS and the SCSt) is estimated at ~6 months (Table 3-2).

3.2.3.1 Pre-installation survey

A pre-installation survey will be undertaken to confirm the bathymetric profile and identify any debris for removal. The pre-installation survey may involve visual inspection and/or use of acoustic survey techniques (such as MBES or SSS) via an ROV.

3.2.3.2 Acoustic positioning

An array of long baseline (LBL) transponders that provide accurate positioning information may be installed on the seabed (as required) to support subsea structure installation activities.

LBL systems work by emitting short pulses of medium to high frequency sound. Transmissions are not continuous but consist of short ‘chirps’ when active and do not emit any sound when on standby.

This equipment will be retrieved following the completion of installation activities under this EP.

3.2.3.3 Mudmats and foundations

The foundation of the SCSt is made up of three mudmats and the MSF. Other separate mudmat foundations will also be installed for the SCMS, the SCSt wet parking structure, and an umbilical termination assembly (UTA). An estimated <0.01 km^2 seabed footprint will be required during mudmats and foundations installation.

Installation of the mudmats and foundations will be undertaken from a construction vessel with heavy lift capability.

The mudmats are designed to be self-penetrating and will not require any form of post landing intervention. The MSF will be lifted from the vessel and lowered onto the mudmats. Initial guiding is done by guidepost mounted on the mudmats and fine alignment is done by a pin and knife system. If required, shims will be used to compensate for level variations between the different support foundations.

3.2.3.4 SCSt process modules and SCMS

Process modules to be installed onto the SCSt MSF include:

- compressor interface module (CIM)
- compressor transformers, and compressor transformer umbilical termination assemblies (UTAs)
- pump and control UTAs
- control power distribution units (CPDU)

- CPDU transformers
- pump modules
- scrubber module
- inlet cooler module
- compressor modules
- discharge cooler module.

Each module will be lifted from the vessel and lowered onto the MSF. All modules will use a common guiding/landing philosophy. Initial guiding will be performed using temporary guideposts. Fine alignment will be handled by a pin and knife system to handle both horizontal position and rotation.

The SCMS will be installed using a similar method onto its foundation supporting structure.

Prior to installation the process modules (except the pump modules) are preserved with nitrogen to avoid air ingress; the pump modules are installed filled with barrier fluid. Piping between closed isolation valves towards hubs, sliding spools, and seabed spools are MEG filled prior to installation.

A UTA (located near the existing Jansz CDU) will also be installed onto its mudmat.

3.2.3.5 Sliding spools

Process modules are connected using sliding spools. The sliding spool is installed with the sliding arrangement attached. Sliding spools are MEG filled prior to installation. MEG contained within the spools may be partly or totally displaced with seawater when protection caps are removed. Upon completion of the installation, the sliding mechanism can be released and spool stroked in place. All tie-ins are performed by ROV operated tie-in tools.

All sliding spools are planned to be installed as separate units, but some may be installed as part of the connected module if they do not exceed the weight limits. As such, sliding spools can either be installed with each module, or at the end when all modules are installed.

3.2.3.6 Flying leads

There will be four types of flying leads:

- EFLs which have combinations of controls power and controls signals
- power flying leads (PFLs) which will have voltage or current above what the EFL can handle
- OFLs which will distribute the fiber communication from the control modules to the fibers in the dynamic umbilicals
- HFLs which will be used for barrier fluid for the pump module.

Over 250 flying leads will be installed. The majority of flying leads will be pre-installed, pre-routed and integrated on SCSt.

Two EFLs will be installed between the Jansz MPTS and Jansz export tie-in spool, and one EFL will be installed between the SCSt and SCMS. One BFFL will be installed between the existing Jansz CDU and the SCSt.

For the MV power and communications umbilical between the FCS and the existing Jansz CDU, two EFLs and up to four OFLs will be installed between the UTA and the existing Jansz CDU infrastructure.

3.2.3.7 Seabed spools

Four seabed spools will be installed between the SCSt and SCMS, and five between the SCMS and Jansz MPTS. Installation activities may include: pre- and post- installation surveys (typically via ROV). Spools will be lowered to the seabed from the vessel, using guide posts and ROV to move into position on the seabed.

Seabed spools are MEG filled prior to installation. MEG contained within the spools may be partly or totally displaced with seawater when protection caps are removed.

During tie-in of the spools to the Jansz MPTS removal of caps may result in in the release of a small volume of production fluids.

3.2.3.8 Infield crossings

The route for the infield MV umbilicals crosses existing Jansz umbilicals and pipelines. Infield crossings will be constructed with concrete mattresses and/or grout bags around this existing infrastructure. Installation activities may include pre- and post- installation surveys (typically via ROV).

3.2.3.9 Infield MV umbilicals

Two subsea pump (SPU) and three subsea compressor (SCU) MV power and communication umbilicals will be installed between the FCS and SCSt. A single MV power and communications umbilical will also be installed between the FCS and the existing Jansz CDU.

Installation activities may include pre- and post- installation surveys (typically via ROV) and post-lay stabilisation (concrete mattresses, grout bags, or similar). The umbilical routes between the FCS and SCSt are schematically represented in (Figure 3-2).

The MV umbilicals will be tied into the FCS in a “Lazy-Wave” formation with buoyancy modules. The MV umbilicals will be hauled into an I-Tube on the FCS using a pull-in winch located on the FCS. The MV umbilical will be transferred from the CLV (or other construction vessel) via a handshake to the pull-in winch. After pull-through, the MV umbilicals will be jointed and terminated (spliced) to the FCS cable.

3.2.3.10 Retrofit insulation

As part of the J-IC subsea installation, the following activities associated with existing Jansz subsea infrastructure will also be undertaken:

- cleaning (and excavation if required) of Jansz export spool
- decommissioning of the existing Ring Pair Corrosion Monitor (RPCM) and removal of two EFLs
- installation of new insulation clamps to required sections of the Jansz export spool
- installation of corrosion monitoring equipment, temperature monitoring sensors, junction box with mudmat, and associated EFLs.

These activities are expected to be undertaken by an LCV and take ~30 days (Table 3-2).

3.2.3.11 Post-installation survey

Post-installation surveys will be undertaken at the end of each set of activities (if required). Surveys may involve visual and/or acoustic (such as MBES or SSS) techniques.

3.2.3.12 Acoustic design

Any underwater sound emissions (e.g. subsea sound emissions from the SCSt or surface sound emission from vessels) have the potential to result in behavioural response, auditory impairment, or auditory injury to marine fauna—depending on the magnitude of the source level, sound energy propagation through the water, and if marine fauna are present within the areas ensonified above the relevant effect criteria thresholds.

The SCSt will generate low frequency continuous (non-impulsive) sound emissions during operations[5]. The predominant sources of sound and/or vibration from the SCSt are the compressors (and their casings) and associated piping. The procedures and processes implemented during the design phases of the J-IC Project to ensure the operating phase is consistent with all relevant regulatory requirements relevant to subsea sound emissions, including the requirements of the OPGGS Act, are described in appendix f. This includes a discussion on potential engineering controls considered during the design phase that could be implemented to manage subsea sound emissions from the SCSt during operations.

Five acoustic abatement solutions and/or best practice manufacturing methods were identified for consideration as engineering controls, of which:

- one has been adopted for use—an upgraded motor stator has already been incorporated into the design and manufacturing process for the three compressors
- three have not been adopted for use—due to effectiveness and/or unproven technology applications in deep water analyses indicate that any environmental benefit is grossly disproportionate to the cost of implementation
- one is undergoing further investigation—different materials and designs of acoustic insulation are being modelled to investigate potential acoustic attenuation performance.

For further description of the engineering controls that have been / are being considered, refer to appendix f. If the design of proposed infrastructure changes such that impacts and risks associated with installation and pre-commissioning activities are potentially greater than those assessed in this EP, CAPL's management of change process will be triggered (Section 8.3.2.2).

In accordance with the requirements of the OPGGS(E)R, the demonstration of control measures to reduce impacts and risks to as low as reasonably practicable (ALARP) will form part of the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan*, and will include engineering design controls

[5] Start-up and operations of the SCSt is not within scope of this installation and pre-commissioning EP (Section 2.3), it will be covered under a revision to the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan* (Ref. 7). This revision will describe in more detail the selection of control measures to mitigate underwater sound emissions from the SCSt during operations.

that have been investigated during detailed engineering design phase for the J-IC Project.

3.2.3.12.1 Acoustic modelling

CAPL is in the process of undertaking sensitivity and verification analyses of the estimated source levels for the SCSt (appendix f). These estimates are based on the outcome of multiple studies, including recent in-water measurements obtained from acoustic loggers deployed near a similar SCSt, and through factory acceptance testing of the J-IC compressors. Refer to appendix f for further information on the studies and modelling undertaken to date to support the estimation of sound source levels for the SCSt. Final source level verification is planned for post-commissioning and start-up of the J-IC SCSt via an in situ underwater sound measurement campaign; this verification step will be incorporated into the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan.*

CAPL is also undertaking underwater acoustic propagation modelling to understand the potential area at risk from subsea sound emissions during operation of the SCSt. Preliminary results of the most recent acoustic models are presented in appendix f. The modelling will be used to inform the impact and risk assessment of underwater sound in the revision to the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan* (Ref. 7).

The modelling will enable CAPL to assess operational environmental impacts and risks, and in determining control measures to manage potential impacts and risks to an ALARP and acceptable level.

In accordance with the requirements of the OPGGS(E)R, the demonstration that environmental impacts and risks associated with the aspect of operational subsea sound emissions are being managed to an acceptable level will form part of the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan*, these types of considerations have been taken into account during the design and development phases of the J-IC Project.

3.3 Pre-commissioning

Pre-commissioning is a group of energized and static tests that constitute verification that the equipment or component is tested and functioning in accordance with the design and ready for commissioning.

3.3.1 FCS pre-commissioning, commissioning, and start-up

In order to pre-commission the SCSt, the FCS, HVSC and MV umbilicals need to be commissioned and started up.

Prior to offshore pre-commissioning and commissioning, activities include the sequential de-preservation and restart of the FCS utility systems. Then, the main activities include transformer and other equipment checks, filling transformers with oil. Testing for the FCS also includes a full function test of the on-board DIFFS; and as described in Section 3.2.1 any discharges from this test will drain direct to the ocean.

Once the HVSC has been jointed and terminated to the FCS cable (see Section 3.2.2.8), testing of HVSC electrical cores will be undertaken. This testing generates an electromagnetic field at nominal operational voltage for a cumulative duration of ~24 hours. The HVSC optic connections will also be tested.

Temporary power (diesel generators) will be utilised on the FCS until the HVSC is commissioned and started-up. Once the HVSC has completed testing, this cable will remain operational and will supply power to the FCS. The temporary diesel generators will be shut-down and removed from the FCS at the completion of commissioning and start-up activities.

Once the HVSC is operational, the MV umbilcals (Section 3.2.3.9) will also undergo testing at nominal operational voltage. The optic connections will also be tested. Once the MV umbilicals have completed testing, these umbilicals will remain operational and will supply power and communications from the FCS to the SCSt.

The pre-commissioning, commissioning, and start-up process is expected to take ~60 days (Table 3-2) for the FCS. Pre-commissioning, commissioning, and start-up activities may be supported by an ASV with a WTW link to the FCS. If an ASV is not selected for use, crew transfers will be via helicopter and the temporary accommodation on the FCS will be used.

3.3.2 SCSt pre-commissioning

The main pre-commissioning activities for the SCSt include:

- nitrogen pressurisation
- barrier testing
- seawater displacement and leak testing of spools.

Other activities may include ROV valve positioning, control system energisation, communications tuning, and actuated valve stroking to make the system ready for commissioning.

Pre-commissioning for the SCSt will begin after all the modules have been installed, the umbilicals have been installed and tested, and the flying leads have been installed leading to mechanical completion.

Pre-commissioning is expected to take ~7 months (Table 3-2)for the SCSt.

3.3.2.1 Nitrogen pressurisation of process modules

Prior to installation the process modules (except the pump modules) are preserved with nitrogen to avoid air ingress; the pump modules are installed filled with barrier fluid. Once lowered onto the MSF, the nitrogen-filled module sections are pressurised further to prevent seawater ingress. Nitrogen will be introduced into the piping of each module via a coiled tubing or composite downline deployed from a vessel.

3.3.2.2 Barrier testing

Barrier testing or leak testing of infrastructure (such as process modules, internal pipework, BFFL) will be undertaken. Barrier testing ensures the valves and caps hold pressure and demonstrates the integrity of the barriers. Testing will be done using either the downline from the vessel or a ROV-mounted fluid injection skid. Barrier testing may result in small volumes of MEG or barrier fluid being discharged into the environment.

3.3.2.3 Seawater displacement and leak testing for spools

Depending on layout, MEG contained within the module piping and spools will be partly or totally displaced with seawater when protection caps are removed.

After the sliding and seabed spools are connected, dyed MEG will be injected through a service hub on the CIM, and the seawater/MEG will be displaced to the marine environment through the subsea flushing and pressure testing unit.

After seawater displacement, spool hub connections, isolation valves used as temporary (single) and permanent (double) barriers, and pressure caps on service hubs will be leak tested by increasing MEG pressure within the spool. The subsea flushing and pressure testing unit shall externally monitor pressures and visual inspections (via ROV) will be conducted to detect leakage of newly made connections.

Some pump barrier fluid will be discharged to the marine environment during seawater displacement of the pump module spools.

3.3.2.4 Isolation

Isolation of the J-IC compression system will be in place to provide a barrier to the existing Jansz hydrocarbon production system. Isolation is maintained through the existing subsea infrastructure barriers.

3.4 Inspection, maintenance, and repair

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

IMR of subsea infrastructure may be undertaken to ensure that the asset integrity is being maintained to acceptable standards while this EP is in-force. IMR activities may occur at any time once the infrastructure is installed, and before commissioning, start-up, and operation of the SCSt, SCMS, and associated subsea infrastructure commences (i.e. activities that will be within the scope of the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* [Ref. 7]). IMR activities (including inspections) are contingent activities that are not planned to occur as part of installation or pre-commissioning activities, however they have been provided for in this EP in the unlikely event that they are required.

3.4.1 Inspections

Inspections provide assurance that asset integrity is being maintained and assets are being operated according to design. They also proactively identify maintenance or repair activities that may be required. Inspection generally involves the use of a vessel travelling along the route, or at the site, of the subsea infrastructure with an AUV or ROV (or in some cases, divers).

Inspections will be undertaken with a frequency determined using a risk-based approach. Events such as cyclones or seismic activity that could affect the subsea infrastructure may also trigger inspections. Inspection techniques may include:

- visual inspections—may involve ROVs or AUVs deployed from a vessel; may also involve divers and a dive support vessel
- marine acoustic surveys—may include the use of SSS and 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—are completed using ROVs or AUVs and conductivity probes or by making visual assessments of anode wastage
- fatigue monitoring/inspection—where required, fatigue monitoring equipment will be installed, inspected, and/or retrieved by a ROV deployed from a vessel
- fatigue monitoring/inspection—where required, fatigue monitoring equipment will be installed, inspected, and/or retrieved by a ROV deployed from a vessel.

3.4.2 Maintenance and repairs

Maintenance and repair activities, including equipment change-out, will be conducted during the operational life of the infrastructure 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.

The exact frequency of maintenance and repair activities will be dependent on the results of inspections. Maintenance and minor repairs (and any associated testing) may include, but are not limited to:

- module/component change-out (including back testing of seals)—may include, but is not limited to, the replacement of subsea infrastructure such as flying leads or equipment modules
- installation of foundations and/or mudmats to support equipment and facilitate maintenance and repair activities
- stabilisation/span correction—may involve activities such as installation of grout bags or concrete mattresses
- subsea excavation—excavation alongside infrastructure may be required to gain access to, or enable minor repairs of, infrastructure
- maintenance of cathodic protection systems / additional anodes—cathodic protection equipment may be added to, or placed adjacent to, production pipelines using a vessel and ROV spread
- removal of marine biological growth and calcareous deposits on subsea infrastructure—may be undertaken by water jetting from an ROV or by divers, generally with potable water or sea water, although items exhibiting calcareous deposit accumulation may require acid washing or soaking (typically using water-soluble sulfamic acid or similar)
  - this task generally precedes pigging or equipment change-out activities, where operation of or access to the equipment is hindered by marine growth or calcareous deposits and as such is estimated to have the same frequency as these activities
- MV umbilical and HVSC repair—may involve activities such as pre- and post-surveys, removal and reinstatement of stabilisation, removal, installation, and testing of umbilical replacement.

3.5 Field support

3.5.1 Vessel operations

The activities covered by this EP, will be supported by various vessel types, including (but not limited to):

- LCV
- CLV
- rock installation vessel
- HLV
- ASV
- tugs
- cargo barge
- HTV
- IMR vessel
- general support vessels.

Vessels will typically use dynamic positioning (DP) to maintain position when stationary. Vessel anchoring within the OA is not intended for planned activities but may occur during emergencies (if required).

A 500 m safety exclusion zone around vessels undertaking installation activities will be requested for the duration of activities.

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 bunker at sea if required. Bunkering for transfer of diesel from a supply vessel to the temporary storage on the FCS will be regularly required (prior to the HVSC being started up). Bunkering for transfer of diesel to storage on the FCS following start-up of the HVSC is likely to be infrequent.

Vessels routinely discharge a variety of wastewater streams into the marine environment, including sewage, greywater, food waste, brine, cooling water, and oily bilge water; vessels may also incinerate solid wastes.

3.5.1.1 Concurrent activities

During the initial campaign (scheduled during late-2024; Table 3-2) up to 3 vessels may be on site within the OA. This activity is associated with the installation of the suction piles for the FCS.

During the second campaign (scheduled to occur between approximately mid-2025 to mid-2026; Table 3-2), up to ten vessels may be on site within the OA at any time, noting that vessel presence will vary during different stages of the activity.

As shown in Table 3-2, most installation activities for each of the FCS, SCSt/SCMS, and HVSC scopes is sequential. However overlaps between FCS, SCSt/SCMS, and/or HVSC activities can occur—as is the case for when the maximum potential number of vessels is predicted to occur within the OA. During late-2025/early-2026 the following activities may occur concurrently:

- installation of the mooring lines and FCS
- installation of the SCSt process modules, SCMS, and other related subsea infrastructure
- installation of the shallow water crossings from the HVSC or pre-lay survey of the HVSC route.

There is up to 6 vessels associated with the installation of the FCS, up to 3 vessels with installation of the SCSt, and 1 vessel with the HVSC during this period.

More commonly there is less vessels (e.g. 2 to 4) within the OA for extended durations during the installation and pre-commissioning activities. Other vessels (e.g. tugs, cargo barges, rock installation vessel) may transit in/out and be on-site within the OA for shorter durations than construction/installation vessels.

3.5.2 Helicopters

Where required, helicopters may be used for crew transfers or freight/goods transfers to/from the vessels undertaking longer duration campaigns. Helicopters will typically operate from Barrow Island or Karratha.

During pre-commissioning, commissioning, and start-up for the FCS, daily helicopter flights for personnel transfer may be required for the duration of this activity (~60 days; Table 3-2)[6].

3.5.3 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
- installing, connecting, or testing of subsea infrastructure
- marine growth removal
- IMR activities.

ROVs are generally equipped with a video camera and lighting. ROVs are also used to deploy specialist tooling and equipment. ROVs are closed systems, such that hydraulic fluids are circulated to move components.

ROVs will typically be stored on the deck of the vessels, but may be wet parked between activities, resulting in a temporary disturbance to a small area of the seabed.

3.6 Decommissioning

In alignment with best practice for proactive decommissioning[7] (Ref. 322), the following summary has been provided of CAPL's approach to decommissioning planning for the infrastructure associated with this EP.

[6] If an accommodation vessel is selected for use, daily personnel transfers via helicopter to the FCS may not be required.

[7] Where 'decommissioning' is taken to mean "the process of removing or otherwise satisfactorily dealing with offshore petroleum property (including wells) in a safe and environmentally responsible manner when it is neither used nor intended to be used" (Ref. 322).

CAPL intends the future retirement of J-IC assets to be undertaken in accordance with the *Chevron Global Upstream Asset Retirement Strategic Framework* (Ref. 323) and in compliance with relevant statutory and regulatory obligations at the time.

It is assumed that the EOFL timing of the decommissioning of J-IC assets will align with the Jansz–Io Deepwater Gas Field Development and Gorgon Gas Development cessation of production currently planned for ~2065 (subject to reserve outcomes and future tie-backs).

The preliminary retirement strategy for the J-IC assets includes:

- initial survey and confirmation of system integrity and suitability for recovery, removal, and disposal
- a staged shut-in of the subsea wells connected to the J-IC assets to allow cessation of production to the SCSt followed by shutdown of the subsea compression system
- flushing and decontamination of the subsea compression system to remove hydrocarbons and associated contaminants
- isolation of the HVSC from Barrow Island to the offshore assets
- disconnection of the power supply and control umbilicals from the FCS
- disconnection of the HVSC and mooring system from the FCS
- transportation of the FCS to an onshore yard for final decontamination, topsides disconnection, and disassembly (for either scrapping, refurbishment, or recycling)
- recovery of subsea infrastructure and transportation to an onshore yard for either scrapping, refurbishment, or recycling
- environmental monitoring throughout decommissioning to ensure activities are executed in accordance with environmental approvals.

All J-IC assets are designed with the intent of being able to be retrieved and removed during decommissioning (see Sections 3.6.1 and 3.6.2 for additional information). However, the preliminary retirement strategy has identified the potential for the following J-IC assets to be decommissioned in situ:

- FCS suction piles and mooring chains below the mudline
- rock dump and any HVSC beneath this secondary stabilisation.

Note: The above is based on preliminary strategy only, and is not a request for deviation from section 572(3) of the OPGGS Act.

Prior to any EOFL decommissioning (Section 3.6.4), CAPL will submit a Decommissioning EP to NOPSEMA that will demonstrate that the impacts and risks associated with J-IC 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), alternative arrangements that may be satisfactory are ones that deliver equal or better environmental, safety and well integrity outcomes compared to complete removal (Ref. 324). The Decommissioning EP will be developed to meet the requirements of the OPGGS Act and OPGGS(E)R, as well as any additional relevant legislation (e.g.

Environment Protection (Sea Dumping) Act 1981) or guidelines (e.g. Ref. 321; Ref. 324) in-force at the time.

Decomissioning may also occur throughout operational field life for property that is within the title area and is neither used nor to be used in connection with the operations authorised by the title (as per the requirements of section 572(3) of the OPGGS Act; see Section 3.6.3).

Once the J-IC assets are commissioned, they will be part of the 3-yearly Gorgon Comprehensive Asset Retirement Obligation review to ensure decommissioning is aligned with best practices.

3.6.1 Infrastructure

Table 3-1 and Table 3-4 provide an overview of the key infrastructure, including material composition, to be installed under this EP.

The J-IC assets will be inspected, maintained, and repaired (as required) to a level which ensures adequate structural integrity is still present at retirement to allow for retrieval (see also Section 3.6.2). Table 3-4 provides a summary of the decommissioning design considerations for the J-IC infrastructure.

Table 3-4: Overview of decommissioning design and maintenance considerations for J-IC infrastructure

Infrastructure	EP Section	Infrastructure description	Decommissioning design and maintenance criteria	Primary composition of materials
Mudmats and foundations	Section 3.2.3.3	The SCSt and SCMS will be installed on foundations mud mats (three for the SCSt and one SCMS). NTE Weight 900 Te for each unit.	The JIC SCSt and associated infrastructure has been designed to enable the use of a field resident AUV or ROV to undertake and support future routine inspection tasks on the SCSt, SCMS, and subsea tie in spools as outlined in the *J-IC Phase 4 Subsea Asset Integrity Management Plan* (Ref. 352). The individual modules of the SCSt, as well as the MSF and mud mats have all been designed for retrieval though lifting by a heavy construction vessel. Therefore, the integrity of lifting points on the various infrastructure will be ensured to allow safe and successful module changeout and ultimately removal during decommissioning. The mitigation for corrosion and deterioration in structural integrity is the corrosion protection and coating system and therefore inspections will focus on these areas. Post flushing and cleaning, the production, utility, and MEG spools and the flying leads have been designed to be able to be disconnected and cut into pieces utilising ROVs and then recovered onto a vessel or barge for transport onshore.	The SCSt modules, SCMS, mudmats and spools are primarily constructed from a variety of structural steel elements, including carbon steel, low alloy steel, super duplex stainless steel and nickel alloys. The piping on the SCSt and SCMs is composed of multi-phase carbon steel. A variety of coatings on the subsea infrastructure will be used, including epoxy, polyurethane and silicone coatings according to the required application.
SCSt	Section 3.2.3.4	Comprising multiple electric MAN Turbo dry gas compressors, liquid pumps, scrubber, inlet cooler, discharge cooler and UTA. Net weight of individual modules 900 Te.		
SCMS	Section 3.2.3.4	Manifolding to enable compression bypass for backfill fields and pigging access. Net weight 900 Te dry.		
Spools	Sections 3.2.3.5 and 3.2.3.7	Sliding spools and seabed spools to allow connection of the SCSt, SCMS, the existing Jansz MPTS, and accommodate potential future tie-ins. 4 x 24” and 1 x30” diameter CRA spools with diver-less connections. 3 x 6” and 1 x 8’’ diameter spools with diver-less connections.		
Flying leads	Section 3.2.3.6	Power, control, and preservation capability is provided via EFLs, PFLs, OFLs, HFLs, and a BFFL. Over 250 flying leads will be installed. Most flying leads will be pre-installed, pre-routed and integrated on SCSt. Two EFLs will be installed between the Jansz MPTS and Jansz export tie-in spool, one EFL will be installed between the SCSt and SCMS. One		Flying leads are constructed from a variety of materials including, stainless steel, metal alloys and thermoplastics.

Infrastructure	EP Section	Infrastructure description	Decommissioning design and maintenance criteria	Primary composition of materials
		BFFL will be installed between the existing Jansz CDU and the SCSt.		
Infield crossings	Section 3.2.3.8	Infield crossings for umbilicals will be constructed with concrete mattresses and/or grout bags around this existing infrastructure.	Infield crossing concrete mattresses and/or grout bags will be designed and installed to allow them to be lifted and retrieved to the vessel/barge using an ROV and work basket.	The infield crossings mattresses will be composed of concrete blocks with polypropylene ropes. Grout bags are likely to be constructed of polypropylene, with the grout likely to be sand or gravel aggregate.
MV umbilicals	Section 3.2.3.9	Two SPU and three SCU MV power and communication umbilicals will be installed between the FCS and SCSt. A single MV power and communications umbilical will also be installed between the FCS and the existing Jansz CDU.	The umbilicals along with their buoyancy modules have been designed to enable disconnection and retrieval from the various subsea assets via ROV to a vessel/barge.	The MV umbilicals will be composed of a variety of materials, including: • outer sheathing meduim density polyethylene (MDPE) • PVC profile fillers • super duplex rods • semi conductive thermoplastic compound (PE 1291) • single mode glass fibre optic cables • galvanised steel wires a stranded copper conductors • extruded semi conducting layer polyethylene • metallic insulation screen.
Retrofit insulation	Section 3.2.3.10	The following equipment associated with existing Jansz subsea infrastructure will also be installed: • new insulation clamps to required sections of the Jansz export spool between the Jansz MPTS and the Jansz production PLET	The retrofit insulation and corrosion monitoring equipment has been specifically designed to be disconnected and retrieved by an ROV to a vessel.	The retrofit insulation will be composed of polyurethane for the insulation shell, metallic components for the clamp, and silicone foam and rubber seals. The corrosion monitoring equipment will be composed primarily of structural steel with electronics and sensors embedded.

Infrastructure	EP Section	Infrastructure description	Decommissioning design and maintenance criteria	Primary composition of materials
		• corrosion monitoring equipment, temperature monitoring sensors, junction box, and associated EFLs.		
FCS	Section 3.2.1.6	The FCS is a semi-submersible platform hosting electrical and power equipment, switchgear, transformers, campaign accommodation, crane, diesel storage, generator, a chain tensioning system and fairlead chain stoppers. Hull weight (dry) 16,000 Te. Topsides weight (dry) 11,000 Te.	The FCS hull, mooring and deck structure shall be designed and built to DNVGL marine classification society rules and has been designed to allow for removal from the field location following the cessation of operations and depressurisation of the SCSt. The FCS has been designed to allow for disconnection of the power supply and control umbilicals, dynamic power cable and mooring systems, via ROVs and cranes. Once disconnected from any subsea infrastructure, the FCS has been designed to allow for de-ballasting and re-connection to tugs for towing out of the field location.	The FCS hull, mooring and deck structure will be constructed primarily of various grades of structural steel in accordance with the marine classification society rules. Other non-steel components, including a variety of plastics will be present on the deck and topside structures.
FCS moorings	Sections 3.2.1.4 and 3.2.1.5	12 mooring line systems consisting of top and bottom chains, anchor chains, polyester rope, mooring connectors and 10 m OD suction piles.	The design of the mooring line system allows for the removal of each mooring line from the hull via ROVs and cranes. The system has been designed to allow for the mooring line below the seabed (“mudline”) to be cut and removed via the use of water jetting and a cutting tool. The suction piles are theoretically capable of being removed from the seabed via pumping of water into the piles to create overpressure and reversal out of the seabed. However,	The mooring system will be composed a variety of materials including steel chain (R4S grade), steel shackles, steel connectors and polyester rope. The suction pile and connectors will be composed of structural steel.

Infrastructure	EP Section	Infrastructure description	Decommissioning design and maintenance criteria	Primary composition of materials
			the feasibility of this given the underlying geotechnical condition of the surrounding sediments at the time will require further investigation closer to EOFL.	
HVSC	Sections 3.2.2 and 3.2.2.3	Single HV dry-type power cable consisting of both dynamic (including ~25 buoyancy modules) and static sections running subsea between the FCS and State waters boundary (~130 km, OD ~200 mm).	The static HVSC has been designed to allow recovery via a powered reel/carousel system on a vessel, which would haul the cable from the seabed for disposal onshore. Sections of the cable that may not be able to be hauled onto a vessel (i.e. trenched sections or sections under the rock dump) will be exposed by water jetting, rock removal, and/or dredging and then cut into sections with an ROV and lifted onto a vessel/barge.	The HVSC will be composed of a variety of materials, including. • a stranded compressed copper conductor • an extruded layer of cross-linked polyethylene (XLPE) insulation • semiconducting polyethylene compound • an extruded polyethylene sheath • a metallic water barrier • nylon and polyester tape • steel amour wire • an extruded outer sheath of insulating polyethylene • glass (pure silica) fibre optic cables.
Shallow water crossings	Section 3.2.2.1	Shallow water crossings will be constructed with either concrete mattresses, concrete bridges or modular protection assemblies attached to the cable, and/or grout bags around this existing infrastructure.	The shallow water crossings concrete mattresses, concrete bridges, modular assemblies, and/or grout bags will be designed and installed to allow them to be lifted and retrieved to the vessel/barge using an ROV and work basket.	The crossings mattresses and concrete bridges will be composed of concrete blocks with polypropylene ropes. The modular protection assemblies are composed of polyurethane. Grout bags are likely to be constructed of polypropylene, with the grout likely to be sand or gravel aggregate.
Rock dump	Section 3.2.2.7	Secondary stabilisation and protection rock installed over the HVSC is	The rock dump berms can be removed via a combination of jetting	The rock dump will be comprised of granite. Granite is composed mainly

Infrastructure	EP Section	Infrastructure description	Decommissioning design and maintenance criteria	Primary composition of materials
		planned between the State waters boundary and ~KP 99.6. Rock dumping may also be used at the shallow water crossings and other areas that were unable to be stabilised via trenching. The nearshore rock berms are expected to have a height above the seabed of ~1.5 m and width of ~9 m. The offshore rock berms for pipeline and umbilical crossings are estimated at ~3 m height and ~16 m width.	and dredging to remove the consolidated rock from the seabed onto barges for transport onshore.	of quartz and feldspar with minor amounts of mica and other minerals.

3.6.1.1 Subsea inventory

To assist with the long-term planning for decommissioning an internal inventory of subsea property is maintained by CAPL. The subsea inventory includes property that is “operational” by the Jansz–Io Deepwater Gas Field Development, as well as “non-operated assets” that are not associated with any of its current operations. Subsea assets classified as abandoned (with relevant supporting regulator documentation) are not included within the subsea inventory.

A static summary of the inventory for WA-19-PL and WA-39-L has been included in appendix e. Note: The static summary does not include property proposed to be installed under this EP (see Section 3.6.1 for a description of infrastructure to be installed under this EP).

3.6.2 Maintenance of property

Section 572(2) of the OPGGS Act requires a titleholder to maintain in good condition and repair all structures, equipment, and other property (hereafter collectively referred to as ‘property’) that is within the title area and is used in connection with the operations authorised by the title. 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. 322).

IMR is included in this EP for the period of time between installation and prior to commissioning and start-up of the SCSt, SCMS and associated subsea equipment (Section 3.4). During commissioning, start-up, and operations, IMR activities are within scope of the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* [Ref. 7]).

As described in Section 3.6.1 and Table 3-4, the J-IC assets will be inspected, maintained, and repaired (as required) to a level which ensures adequate structural integrity is still present at retirement to allow for retrieval (see also Section 3.6.2). In order to meet the requirements of the preliminary retirement strategy for the J-IC assets, the *J-IC Phase 4 Subsea Asset Integrity Management Plan* (Ref. 352) and *J-IC Phase 4 Field Control Station Asset Integrity Management Plan* (Ref. 353) will be updated to include criteria for assessing suitable structural integrity and the means by which inspection and monitoring will be conducted to ensure this.

3.6.3 Removal of 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. It is understood that removal of property can be undertaken throughout operations; however, NOPSEMA recognises that removal may not always be practical at the time when property is neither used, nor to be used (Ref. 321).

Within the in-force period of this EP, there is no plan to cease using any property, and thereby require removal under section 527(3). During commissioning, start-up, and operations, removal of property is within scope of the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 7).

However, in the event that any property becomes neither used or to be used during the in-force period of this EP, 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 3.6.1.1), 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 3.6.2).

If any redundant property is to be removed, CAPL will engage with NOPSEMA regarding the removal of this property to determine if an EP (either new, or revision to an existing EP) is required.

3.6.4 End of facility life

As described in Section 2.3 EOFL decommissioning and removal of infrastructure under section 572(3) of the OPGGS Act, is not within scope of this EP. As described in the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 7) prior to any EOFL decommissioning, CAPL will submit a Decommissioning EP to NOPSEMA that will demonstrate that the impacts and risks associated with J-IC decommissioning activities are reduced to ALARP and acceptable levels.

Where J-IC infrastructure overlies existing GFP or GS2 infrastructure (refer to Sections 3.2.2.1 and 3.2.3.8), CAPL considers this will not affect the integrity of this infrastructure such that it would subsequently affect CAPL’s approach to decommissioning for GFP or GS2 infrastructure. It is noted that where J-IC infrastructure crosses other CAPL umbilicals or pipelines that subsequently need to be decommissioned, these sections of umbilical or pipeline underneath J-IC infrastructure would remain in situ until recovery of the J-IC infrastructure. CAPL intends the future retirement of all GFP, GS2, and J-IC assets to be undertaken in accordance with the *Chevron Global Upstream Asset Retirement Strategic Framework* (Ref. 323) and in compliance with relevant statutory and regulatory obligations at the time.

Where J-IC infrastructure crosses over third-party infrastructure (refer to Section 3.2.2.1), the crossing agreements between parties specifically describes the decommissioning approach to be undertaken at the time.

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.

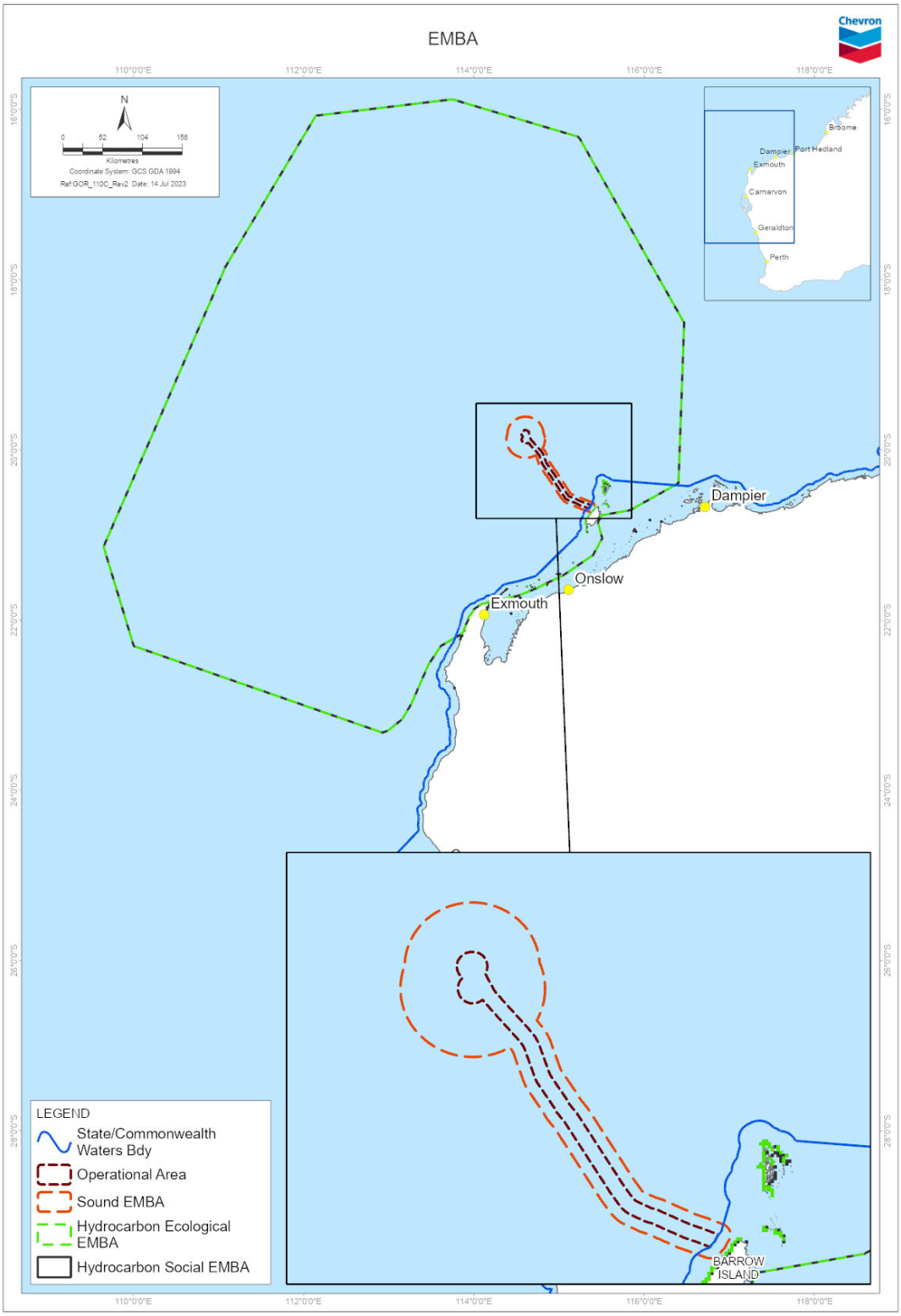
For the following sections, the document refers to the EMBA when it is applicable to all the sub-areas identified in Table 4-1.

Table 4-1: Description of EMBA sub-areas for J-IC

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.
Underwater Sound EMBA (Sound EMBA)	The Sound EMBA is relevant to the impact and risk assessments for planned underwater continuous (non-impulsive) sound emissions (Sections 7.6 and 7.7), and determined by the predicted spatial extent of acoustic exposure at the relevant thresholds.
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 7.15 and 7.16), and determined by the predicted spatial extent of hydrocarbon exposure at the relevant thresholds for surface, entrained, dissolved, and shoreline components (Table 7-14).
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 7.15 and 7.16), and determined by the predicted spatial extent of hydrocarbon exposure at the relevant thresholds for surface, entrained, dissolved, and shoreline components (Table 7-14). 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 is determined by the predicted spatial extent of hydrocarbon exposure at the relevant thresholds for surface, entrained, and dissolved components (Table 7-14). The values and sensitivities of this area are described within Appendix D of the *Operational and Scientific Monitoring Plan: Environmental Monitoring in the Event of an Oil Spill to Marine or Coastal Waters* (Ref. 3).

The above approach to defining the spatial extent of the EMBA is considered to be consistent with NOPSEMA's advice in their oil spill modelling environment bulletin (Ref. 125).



Note: The Hydrocarbon EMBAs are shown as separate in-water (surface, entrained, dissolved) and shoreline components. Shorelines are only part of a Hydrocarbon EMBA where stochastic spill modelling predicts that shoreline loading above the relevant threshold occurs.

Figure 4-1: EMBA for J-IC installation and pre-commissioning

4.2 Matters of national environmental significance

Matters of national environmental significance (MNES) are protected under the EPBC Act (Cth). The presence of MNES within the EMBA has been determined from the Australian Government's online Protected Matters Search Tool (PMST) (Ref. 53). Table 4-2 summarises the presence of relevant marine and/or coastal MNES within the EMBA; the full PMST reports[8] are included in appendix b.

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 within the EMBA

MNES	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBA
World Heritage properties^	×	×	✓
National Heritage places^	×	×	✓
Wetlands of international importance (Ramsar wetlands)^	×	×	×
Nationally listed threatened species and communities^	✓ species × 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 the maintenance of biological diversity by providing structurally complex and diverse habitat, refuge for vulnerable life stages and a varied and increased food supply (Ref. 162).

[8] The PMST is a general database that includes all MNES, including species or features (such as terrestrial-based species or features) that are not expected to credibly occur within the EMBA.

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. 88; Ref. 163). The high species richness is thought to be associated with the diversity of habitats available, such as limestone pavement, coral reefs, and pinnacles (Ref. 88). 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 4.3.1.1.

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. 164), the geomorphic features present within the EMBA are shown in Table 4-3. One of the pinnacle features identified within this dataset is Rankin Bank, a known bathymetric feature of regional significance, which occurs within the Hydrocarbon EMBAs (see Section 4.3.1.2).

Table 4-3: Geomorphic features

Feature	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
Abyssal-plain/deep ocean floor			✓
Canyon			✓
Continental rise			✓
Deep/hole/valley	✓	✓	✓
Knoll/abyssal-hills/hills/mountains/peak			✓
Pinnacle			✓
Plateau			✓
Reef			✓
Ridge			✓
Shelf	✓	✓	✓
Slope	✓	✓	✓
Terrace	✓	✓	✓
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 bio-clastic, calcareous, and organogenic sediments deposited from relatively slow and uniform sedimentation rates (Ref. 165). 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. 166).

Based on CSIRO's marine benthic substrate database (Ref. 167), the predominant seafloor sediment type within the OA and Sound EMBA is "calcareous gravel, sand and silt" with smaller coverage of "calcareous ooze" present in the deeper offshore areas around the existing Jansz CDU. In addition,

the Sound EMBA also intersects with “mud and calcareous clay” in the deeper offshore areas. Within the Hydrocarbon EMBAs several seafloor sediment types were identified: “calcareous gravel, sand and silt”, “calcareous ooze”, “mud and calcareous clay”, and “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. 168). The OA and Sound EMBA occur within the Northwest Province and Northwest Shelf Province provincial bioregion. The Hydrocarbon EMBAs also intersect with the Northwest Transition, Central Western Shelf Transition and Central Western 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. 163*),* 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	Sound EMBA	Hydrocarbon Ecological and Social 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 to the 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 discernable 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 withing 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:			

IMCRA Provincial Bioregion^	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBA
• 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, Sound EMBA and Hydrocarbon EMBAs. Refer to Section 4.3.6.1 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 • 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, Sound EMBA, and Hydrocarbon EMBAs. The Exmouth Plateau and canyons on the slope also occur within the Hydrocarbon EMBAs. Refer to Section 4.3.6.1 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			

IMCRA Provincial Bioregion^	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBA
• 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, Sound EMBA, and Hydrocarbon EMBAs. Refer to Section 4.3.6.1 for further descriptions of this feature.			
Central Western Shelf Transition			✓
Characteristics of the geomorphology and biological communities of the Central Western Shelf Transition include: • 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 – 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[9] 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.			

[9] Ningaloo Reef also extends into the Northwest Province, Central Western Transition Province, and a small portion of the Northwest Shelf Province. The geomorphology and biological communities of Ningaloo Reef are discussed in this bioregion summary.

IMCRA Provincial Bioregion^	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBA
Features and areas of ecological importance within the Central Western Shelf Transition have been identified as: • Ningaloo Marine Park – North West Cape. Of these features and areas within the Central Western Shelf Transition, the Hydrocarbon EMBAs intersect with the State Ningaloo Marine Park. Refer to Section 4.5.2 for further descriptions of this 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 • 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 • Cape Range Canyon and Cloates Canyon. Of these features and areas within the Central Western Transition, the Cape Range Canyon and Cloates Canyon occurs within the Hydrocarbon EMBAs. Refer to Section 4.3.6.1 for further descriptions of this feature.			

^ *Source: Ref. 163.*

4.3.1.1 Operational Area

In addition to the broad marine habitat description provided for the EMBA, CAPL has conducted surveys within the Janzs-Io pipeline route to understand the nature and composition of habitat and seabed sediments. These surveys comprise geophysical surveys, visual ROV surveys, and seabed sampling.

Data from these surveys were interpreted to characterise the benthic substrate. The benthic substrate within the deeper waters of the OA predominantly comprise soft sediments (clays) (Figure 4-2). These transition to sands, clays, or gravels overlying subcropping cemented sediments in the shallower waters (Figure 4-2).

The benthic substrate within the OA from the State water boundary to water depths of ~50 m predominantly comprises bare sand (Figure 4-3). Sand was the dominant substrate in most of the observations (~90%). Limestone pavement with a shallow sand veneer was the next most common substrate encountered, dominating the substrate in less than 10% of observations. Reef (low and high profile) was the dominant substrate in less than 5% of observations (Ref. 255).

Coastal and marine baseline and post-development studies undertaken by CAPL for the Feed Gas Pipeline (Ref. 257; Ref. 258) classified the habitat within State waters adjacent to the OA as ‘soft sediment with sparse sessile taxa’. This habitat type was predominantly unvegetated sand, with patches of seagrass and macroalgae, and no associated sessile biota. Similar habitat is expected to extend within the shallower waters of the OA.

Further offshore in the gully region along the Jansz pipeline route in ~250 m water depth, previous ROV surveys have indicated that the seabed was found to be dominated by silty mud with little evidence of marine flora or fauna (Figure 4-4) (Ref. 256).

Based on ROV transects taken in the scarp region within water depths of 558–714 m, the most common benthic substrate comprised soft sediments—sand, silt, and mud (Ref. 256; Figure 4-5). These habitat types are widespread in the region and are not considered to be of regional significance due to their ubiquity and the sparseness of biota supported (Ref. 256). The steep scarp face was found to comprise mainly over-consolidated silt materials, mostly devoid of marine growth, with occasional sparse communities of benthic invertebrates including soft corals, bryozoans, and colonial ascidians (Figure 4-5). These over-consolidated silt sediments provide structural diversity to an otherwise flat benthos. They are of higher conservation significance than the soft sediment habitats found in the area as they are less widespread and support more abundant biota (Ref. 256). However, based on the high-resolution bathymetry data from the area (Ref. 256), these hard scarp features probably stretch at least 10 km to the north and 5 km the south of the Jansz pipeline.

Recent (2022) surveys of benthic habitat along parts of the Jansz pipeline route (Ref. 262) are consistent with previous surveys. The recent surveys showed the predominant benthic habitat was bare substrate, with either a smooth (mostly flat) or irregular (mostly flat with minor features) surface (Ref. 262). The only area identified as a high likelihood of biota being present was some patches over the scarp (Ref. 262).

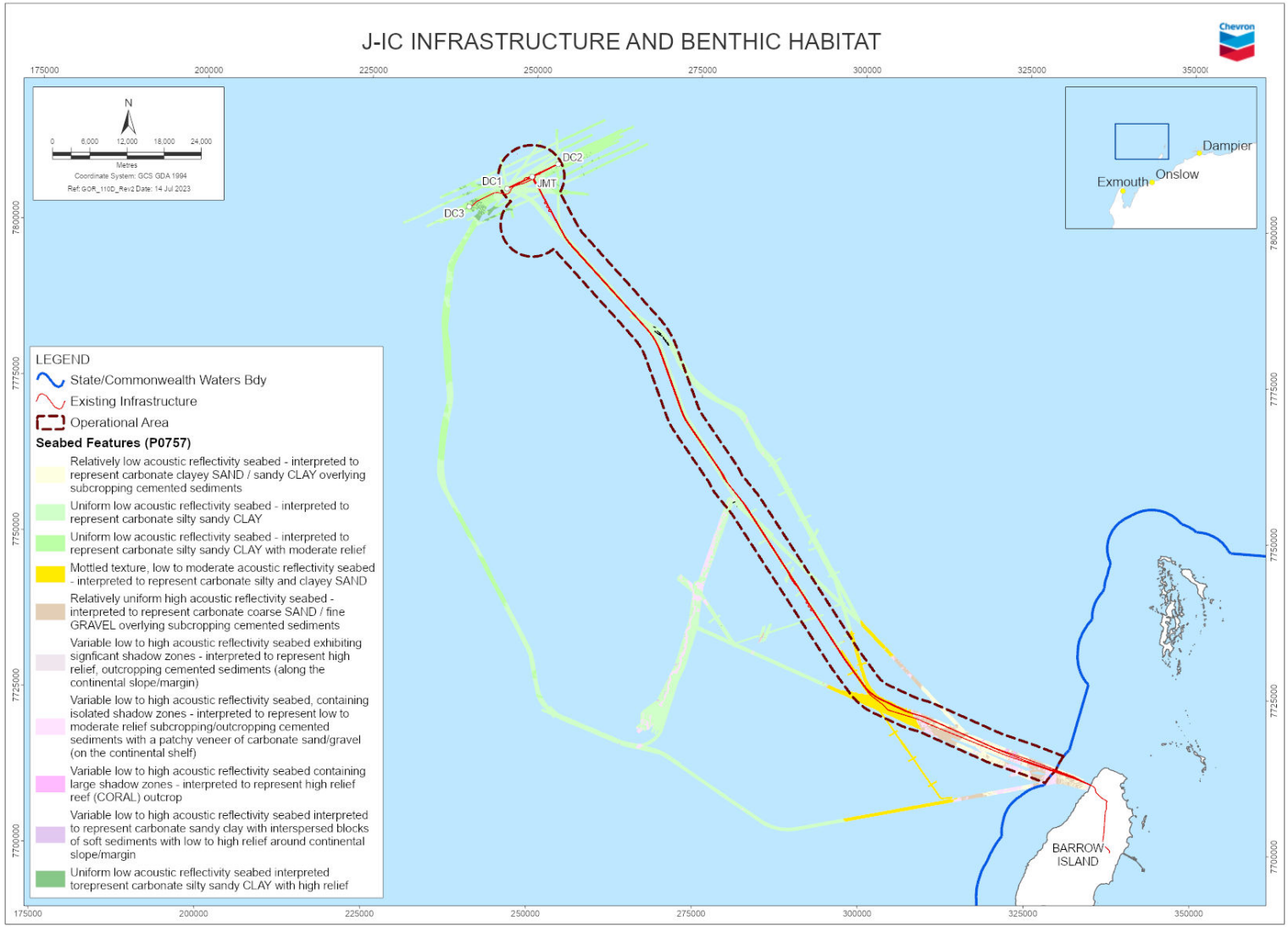


Figure 4-2: Benthic substrate in the vicinity of the existing Jansz Feed Gas Pipeline and field infrastructure

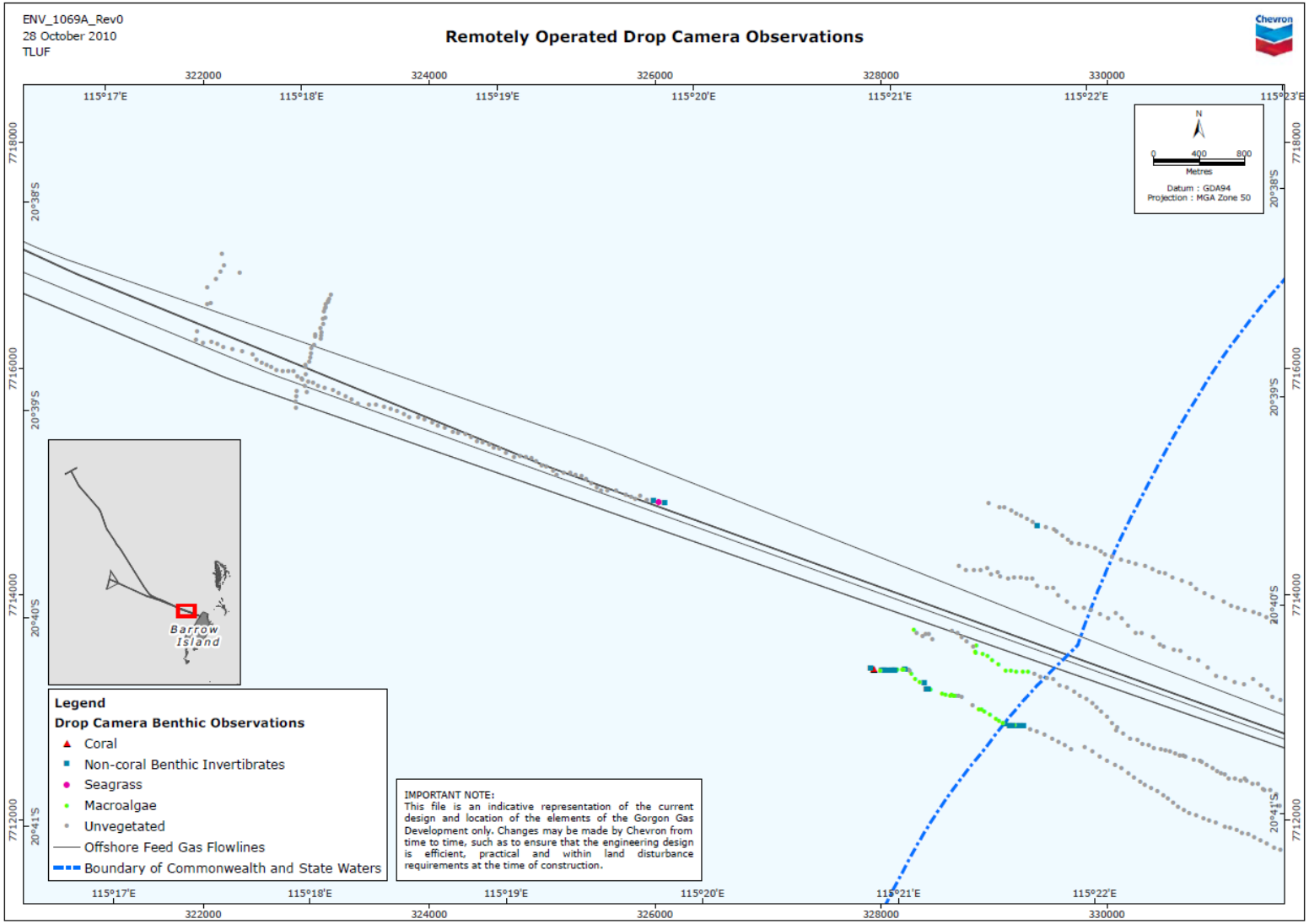
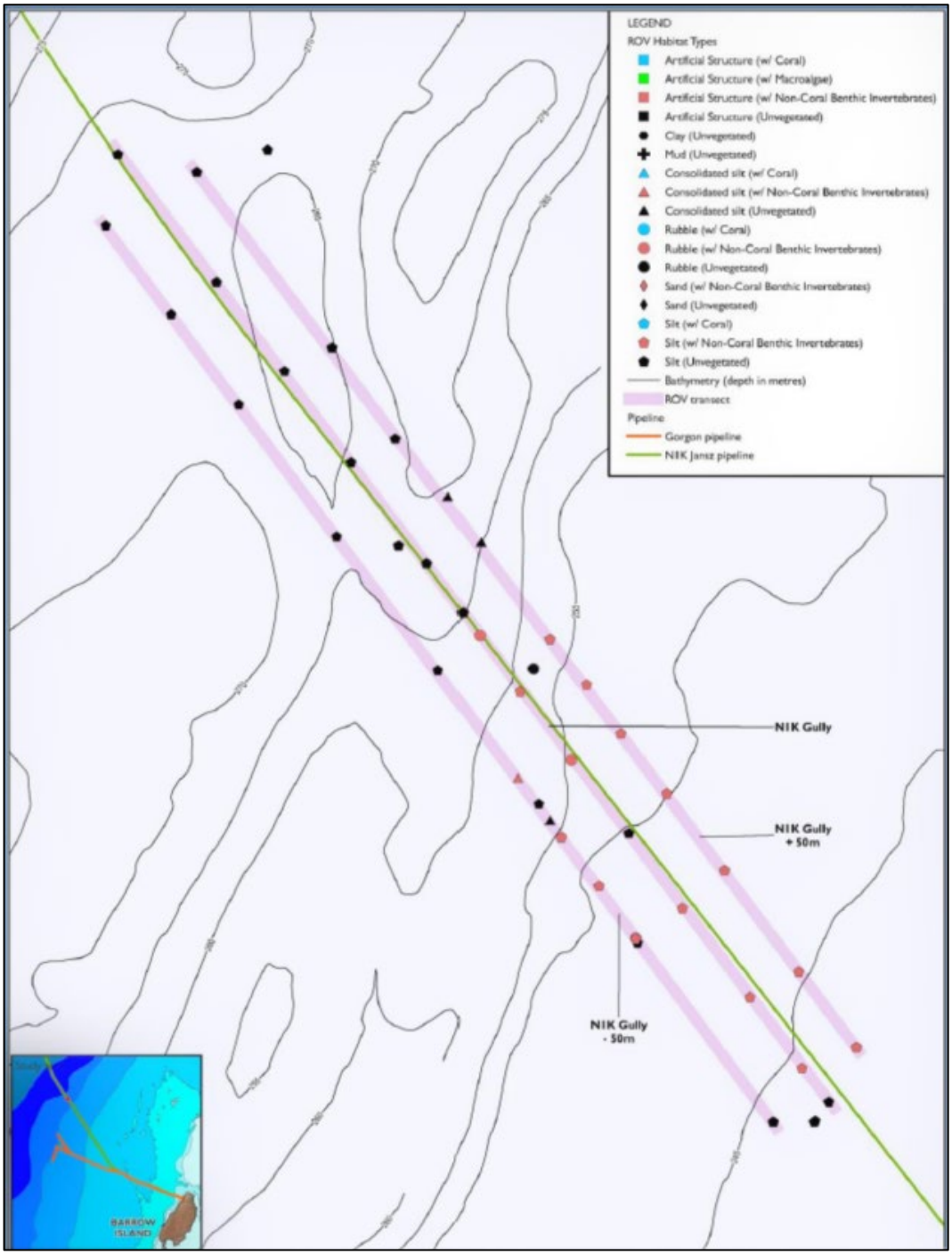
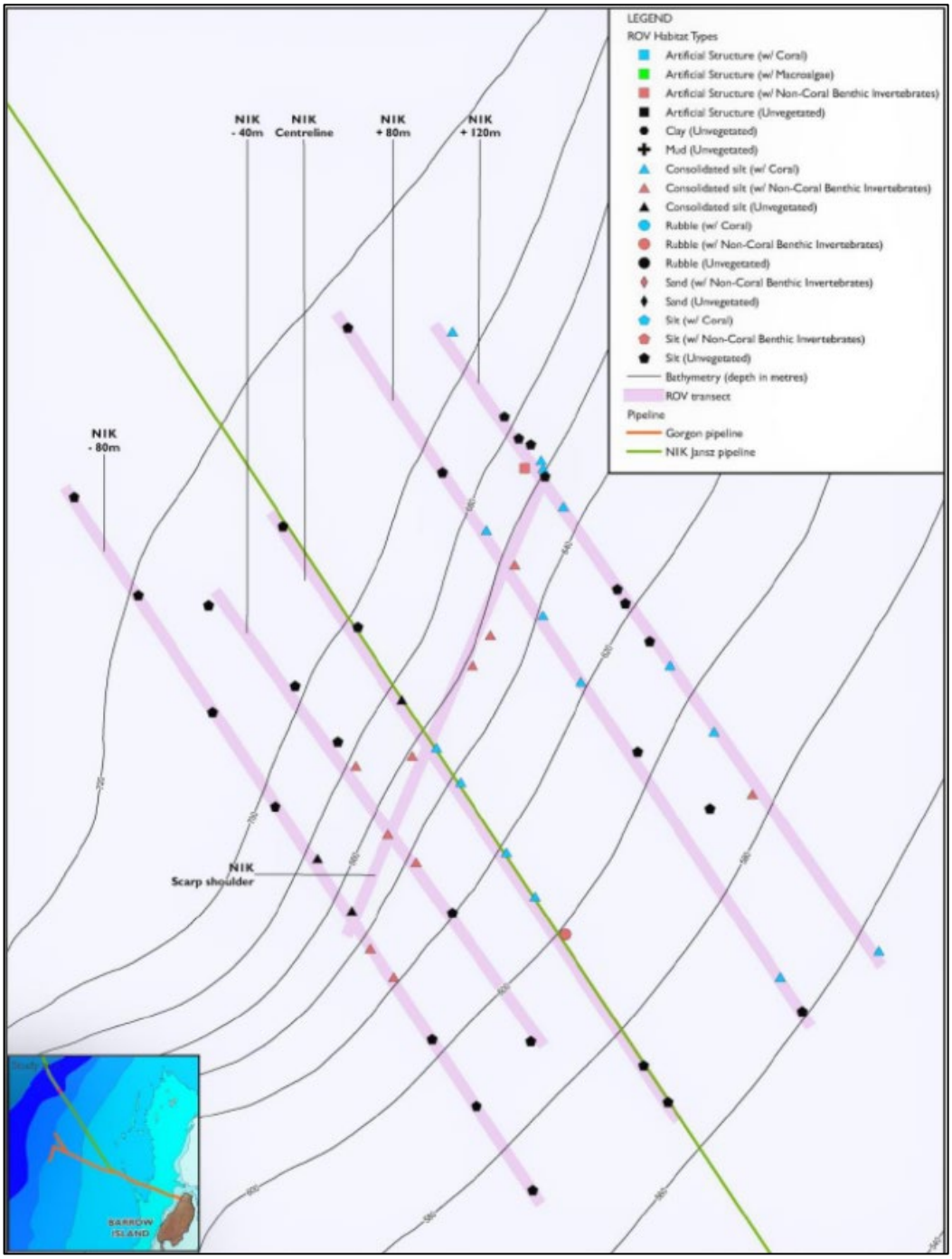


Figure 4-3: Benthic habitat along the Jansz Feed Gas Pipeline within the vicinity of the State waters boundary



Source: (Ref. 256)

Figure 4-4: Benthic habitat at the gully region along the Jansz Feed Gas Pipeline



Source: (Ref. 256)

Figure 4-5: Benthic habitat at the scarp region along the Jansz Feed Gas Pipeline

4.3.1.2 Rankin Bank

Rankin Bank is located ~100 km northeast of the OA. While Rankin Bank is not protected and is not a key ecological feature (KEF), it is a large, complex bathymetrical feature on the outer western shelf of the Pilbara region and represents habitats that are likely to play an important role in the productivity of the Pilbara region (Ref. 169). Rankin Bank consists of three submerged shoals delineated by the 50 m depth contour with water depths of ~18–30.5 m (Ref. 169). In 2013, 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. 169). 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. 170). Encrusting corals (reaching cover of ~12.5%) at depths less than 40 m and solitary corals (~10% cover) primarily at depths between 40–60 m, were also present (Ref. 170). Other benthic taxa including soft corals and sponges were present in lower proportions at all depths (Ref. 170). The high cover of macroalgae and hard corals in shallower water depths are likely due to greater light penetration and lower sand cover (Ref. 170).

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.

The OA and Sound EMBA occur offshore and do interface with the coast. The Hydrocarbon EMBAs do interface with the coast (due to predicted shoreline loading associated with unplanned hydrocarbon release events; Table 4-1). The Hydrocarbon Ecological EMBA includes the west coasts of Barrow, Middle and Boodie islands, as well as parts of Montebello, Lowendal, Serrurier, Bessieres, and Flat islands. The Hydrocarbon Social EMBA includes the above coastal areas, as well as: parts of Passage Island, Steamboat Island, and Cape Preston; parts of the western and northern coasts of the North West Cape peninsula; and several of the Pilbara Inshore Islands (e.g. Muiron, Sunday, Fly, Tortoise, Thevenard, Airlie, Tortoise, Round and Table islands) (Figure 4-1). The coastal communities and habitats that may be present within the EMBA are summarised below.

Based on Smartline (Ref. 171), a spatial database containing geomorphic classifications for Australia's coasts, the types of shoreline present within the Hydrocarbon Ecological and Social EMBAs include rocky coasts and sandy beaches. Within the Hydrocarbon Social EMBA, an additional shoreline type was identified; mudflats associated with some areas of the North West Cape peninsula.

The Seamap Australia spatial database collates and classifies marine and coastal habitats on the Australian continental shelf (Ref. 172). Based on this dataset, areas of saltmarsh may be present on southwestern Barrow Island; and isolated areas of mangroves may be present on Montebello 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). Coastal and marine baseline studies undertaken by CAPL (Ref. 214) identified that there are no mangrove stands on the west coast of Barrow Island, where the Hydrocarbon EMBAs intersect with the coast. One species of mangrove, *Avicennia marina*, is known to occur in sparse stands on the north-east and southern coasts of Barrow Island (Ref. 214, Ref. 247).

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 Hydrocarbon Social 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 within the EMBA.

4.3.3.1 Marine mammals

Based on searches of the online PMST (Ref. 53; appendix b), the threatened and/or migratory marine mammal species shown in Table 4-5: may be present within the EMBA. The full list of marine species identified from the PMST is provided in appendix b. Biologically important areas[10] (BIAs) associated with regionally significant marine mammal species are listed in Table 4-6:.

For the threatened and/or migratory species with BIAs within the OA or Sound EMBA (i.e. EMBAs associated with planned activities), additional information has been provided in the following subsections.

The threatened and/or migratory cetaceans that may be present within the OA and Sound EMBA are predominantly low-frequency cetaceans[11] (Antarctic Minke Whale, Blue Whale, Bryde's Whale, Fin Whale, Humpback Whale, Sei Whale) and high-frequency cetaceans[12] (Sperm Whale, Australian Humpback Dolphin, Australian Snubfin Dolphin, Killer Whale, Spotted Bottlenose Dolphin). Very-high-frequency cetaceans[13] (e.g. Dwarf Sperm Whale, Pygmy Sperm Whale) were also identified within the PMST (Ref. 53; appendix b) as species or species habitat that may occur within the OA and Sound EMBA, these species are not listed as threatened and/or migratory under the EPBC Act. As shown in Table 4-6:, except for Pygmy Blue and Humpback Whales, there are no other known BIAs or aggregation areas for other cetacean species that intersect with the OA or Sound EMBA; as such, it is expected that any presence cetacean species within the OA and Sound EMBA would be of a transitory nature.

CAPL deployed three acoustic loggers for a full year period in 2019 located at various sites and depths adjacent to the existing Jansz field infrastructure. Several species of cetaceans were identified, including Pygmy Blue, Antarctic Blue, Omura's, Bryde's, Dwarf Minke, Antarctic Minke, Fin, Humpback, Sei and Sperm whales. Small odontocetes (e.g. dolphins) were also detected (Ref. 233).

[10] Biologically important areas are spatially defined areas where aggregations of individuals of a species are known to display biologically important behaviour such as breeding, foraging, resting or migration.

[11] Low-frequency cetaceans are the functional cetacean hearing group that are specialised for hearing low frequencies (e.g. baleen whales).

[12] Mid-frequency cetaceans are the functional cetacean hearing group that are specialised for hearing mid frequencies (e.g. toothed whales, beaked whales, dolphins).

[13] High-frequency cetaceans are the functional cetacean hearing group that are specialised for hearing high frequencies (e.g. *Kogia* spp).

Table 4-5: Presence of listed threatened and/or migratory marine mammals

Common name (EPBC protected status)	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
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)*	✓	✓	✓
Cetaceans (dolphins)			
Australian Humpback Dolphin *(Migratory)*	✓	✓	✓
Australian Snubfin Dolphin *(Migratory)*	✓	✓	✓
Killer Whale *(Migratory)*	✓	✓	✓
Spotted Bottlenose Dolphin *(Migratory)*	✓	✓	✓
Sirenians			
Dugong *(Migratory)*	✓	✓	✓

Table 4-6: Presence of BIAs for marine mammals

Common Name	BIA Behaviour	Seasonal Presence^	OA	Sound EMBA	Hydrocarbon and Social Ecological EMBAs
Dugong	Breeding	Year round			✓
	Calving	Year round			✓
	Foraging (high density seagrass beds)	Year round			✓
	Nursing	Year round			✓
Humpback Whale	Migration (north and south)	Northern migration, late July to September	✓	✓	✓
Pygmy Blue Whale	Foraging	(Not defined in database)			✓
	Migration	Northern migration (enter Perth canyon January to May; pass	✓	✓	✓

Common Name	BIA Behaviour	Seasonal Presence^	OA	Sound EMBA	Hydrocarbon and Social Ecological EMBAs
		Exmouth April to August; continue north to Indonesia) Southern migration (follow WA coastline from October to late December)			
Southern Right Whale	Migration	Approximately April to October			✓
	Reproduction	Approximately May to September			✓

^*Source: Ref. 178, Ref. 299.*

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. 223). 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. 300; Ref. 301).

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. 223). The migration (north and south) BIA corridor extends from the coast to out to ~100 km offshore in the Kimberley and Pilbara regions; reducing to ~50 km offshore south of North West Cape (Figure 4-6).

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. 223). Breeding and calving occur in the region between mid-August and early-September (Ref. 223), 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. 223). 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. 223, Ref. 224). 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. 223; Ref. 225). The predicted peaks in Humpback Whale migration in the Montebello Islands region are late-July (northern migration) and early-September (southern migration) (Ref. 223). Females and calves are known to stop and rest in Exmouth Gulf and Shark Bay (Ref. 223).

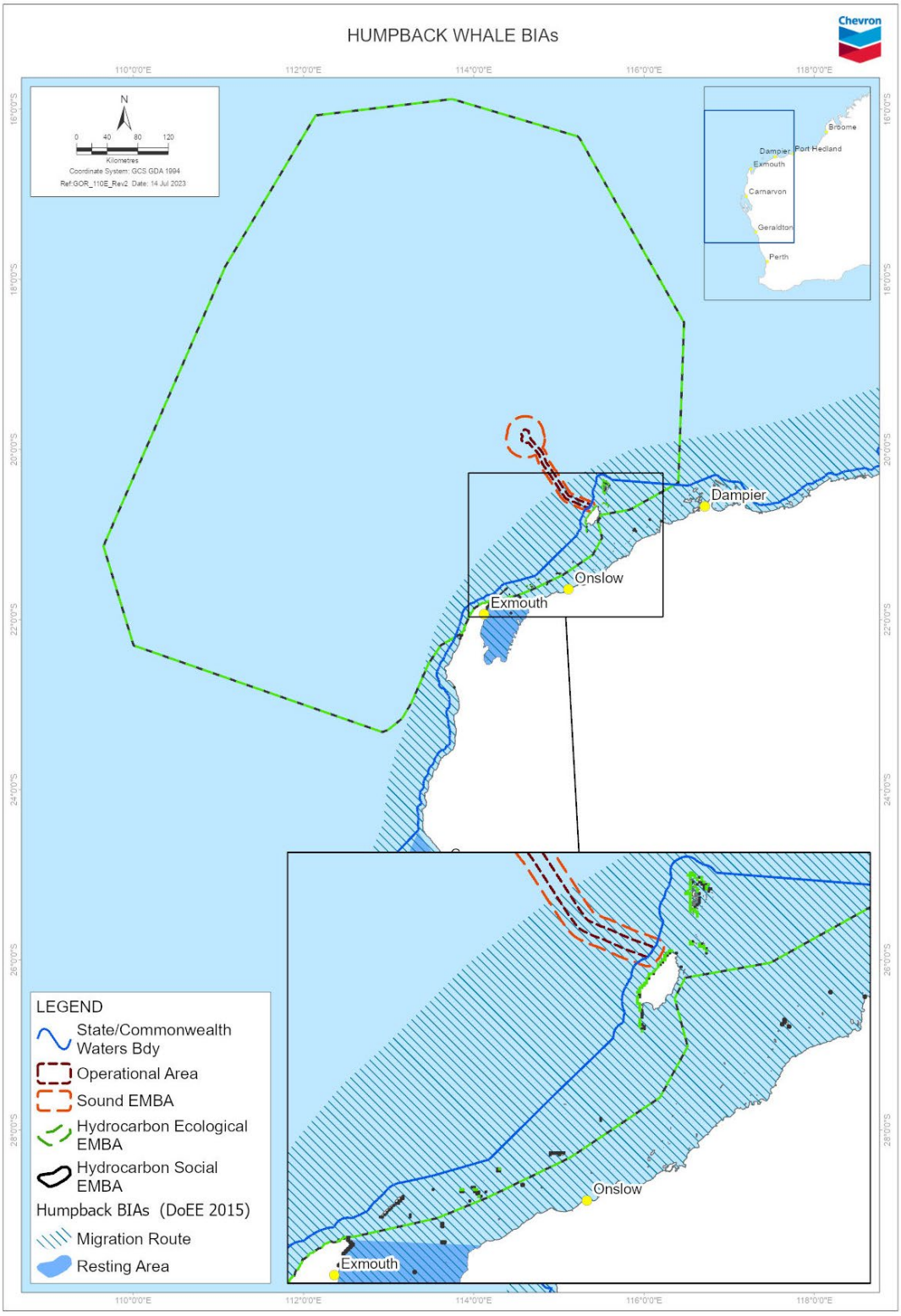


Figure 4-6: Biologically important areas for Humpback Whales

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. 226). 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. 228; Ref. 229; Ref. 230). 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. 230; Ref. 231).

Acoustic monitoring conducted by McCauley and Jenner (Ref. 232) 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. 232) that between 700 and 1,500 Pygmy Blue Whales migrated southward past Exmouth in 2004.

CAPL noise loggers deployed for a full year period in 2019 detected Pygmy Blue Whales on their northern and southern migration (Ref. 233). The noise loggers were located at various sites and depths adjacent to existing Jansz field infrastructure (and within the OA). The detection of Pygmy Blue Whale song peaked from mid-April to the end July, and then again from beginning of November through to early-December (Ref. 233). 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. 233).

It is known the Pygmy Blue Whales 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. 88; Ref. 60). However, more recent studies (e.g. Ref. 230; Ref. 226) 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. 230). 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. 87). Gavrilov et al. (Ref. 226) 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. 226). Pygmy Blue Whales have demonstrated extensive use of continental slope habitat off Western Australia and only limited use of shelf waters (Ref. 87). This contrasts with southern Australia, where use of the shelf and shelf break by Pygmy Blue Whales is more common.

McCauley and Jenner (Ref. 232) 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. 87), 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 recent study incorporating data collected from both passive acoustic monitoring and satellite telemetry data, was analysed and determined the 'most important areas' for migration[14] 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. 87). The deeper northern extent of the OA and Sound EMBA does intersects with the most important area for migration (Figure 4-7).

Predictions from modelling 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. 87). Monthly spatial predictions indicated higher densities around the Montebello Island region during May and June (northern migration) and November and December (southern migration) (Ref. 87).

Pygmy Blue Whales aggregate in the Austral 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. 87). 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. 60). The *Conservation Management Plan for the Blue Whale* (Ref. 60) also identifies 'Possible Foraging Areas'[15], including two in WA, one off the Ningaloo coast, and another around Scott Reef. These 'Possible Foraging Areas' have been characterised as foraging BIAs and occur ~170 km south-west and ~870 km north-east of the OA respectively.

Thums et al (Ref. 87) 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. 87). This high move persistence is indicative of migration, while the low move persistence is generally indicative of foraging (Ref. 87). Data collected from both passive acoustic monitoring and satellite telemetry data, was analysed and determined the 'most important areas' for foraging[16] 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. 87). Although foraging areas are described as static, they are likely to be dynamic given their dependence on presence of prey (Ref. 87; Ref. 244). The OA does not intersect with the most important area for foraging; however parts of the

[14] Grid cells with overlap between two metrics: largest percentage of whales and high move persistence, were designated as the 'most important areas' for migration (Ref. 87).

[15] "Evidence of feeding is based on limited direct observations or through indirect evidence, such as occurrence of krill in close proximity to whales, or satellite tagged whales showing circling tracks. Blue whales travel through on a seasonal basis, possibly as part of their migratory route" (Ref. 87).

[16] Grid cells with overlap between three metrics: greatest time spent, largest percentage of whales, and lowest move persistence, were designated as the 'most important areas' for foraging (and/or resting/breeding) (Ref. 87).

Sound EMBA (associated with the installation of the FCS and SCSt) do intersect with areas identified as most important for foraging (Figure 4-8).

The OA is located in water depths ranging from ~25–1,350 m. The defined BIA for Pygmy Blue Whales overlaps the northern part of the OA; however, it is expected based on satellite tracking and acoustic detection studies that Pygmy Blue Whales are likely to travel further offshore, particularly on their southern migration (November to December), but also during the northern migration (April to August). 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. 87). The outer extents of the Sound EMBA do intersect with these areas identified as potential foraging.

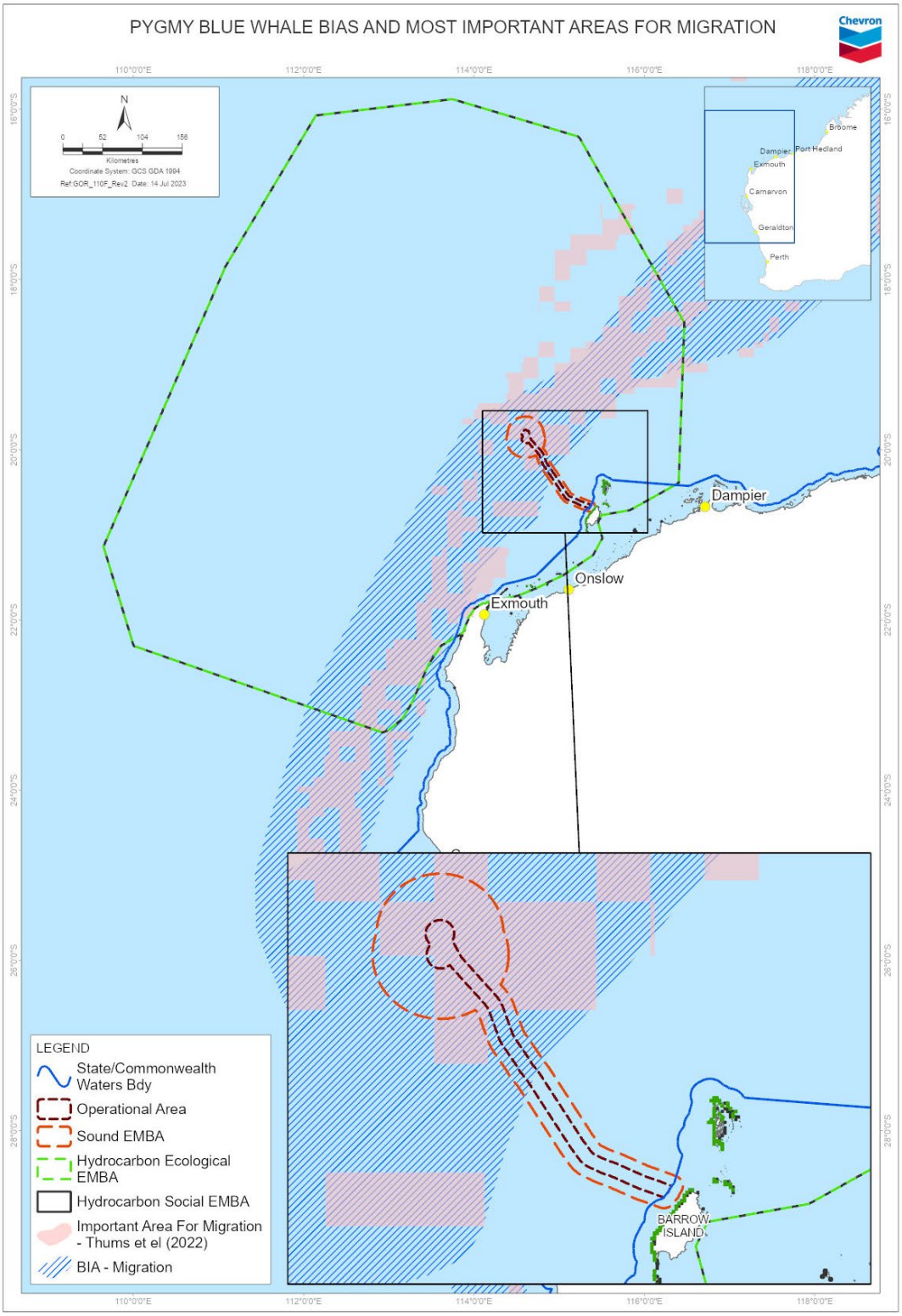


Figure 4-7: Most important areas (pink) for migration along WA coast as determined by Thums et al (2022); inset shows overlap of the OA

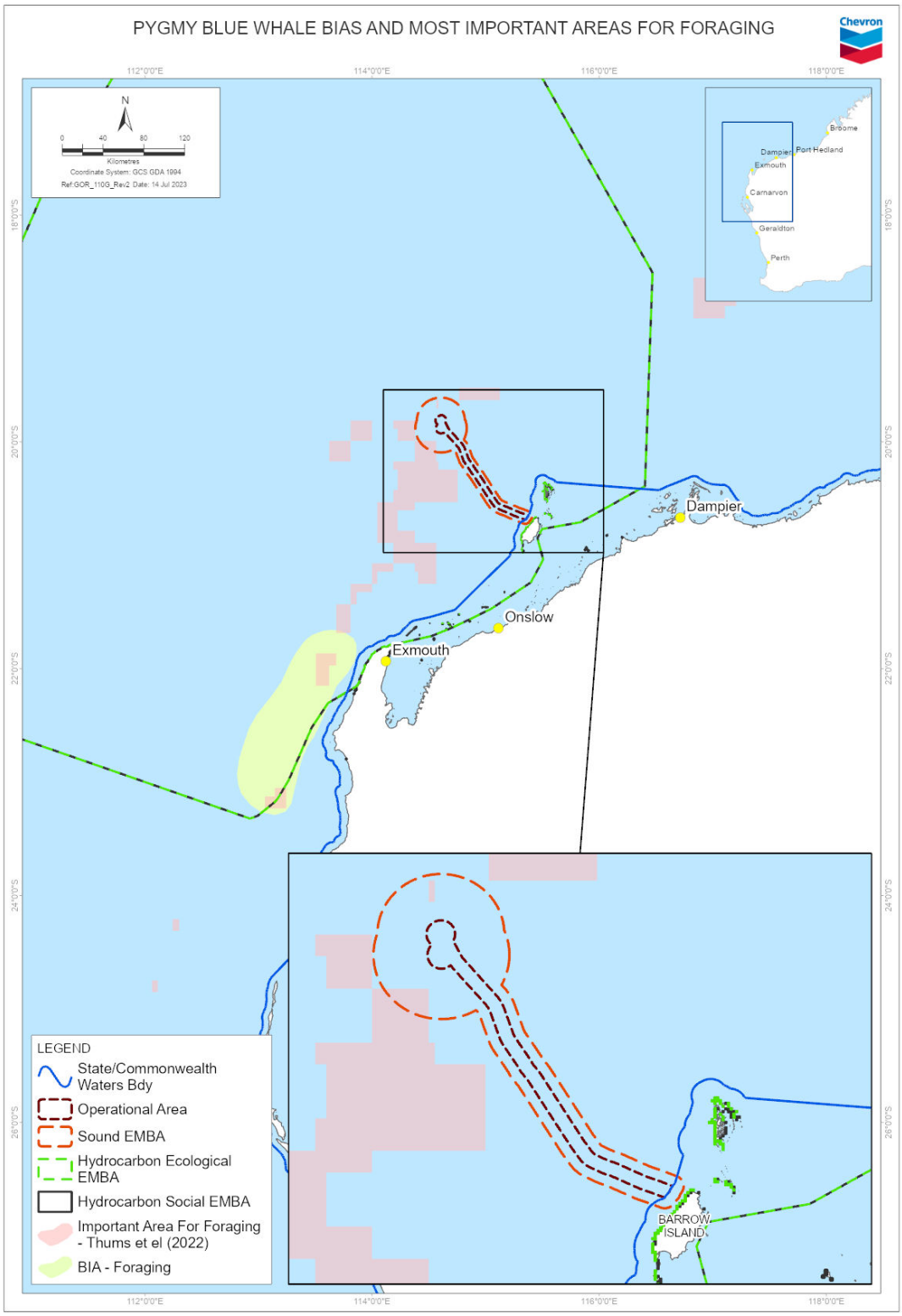


Figure 4-8: Most important areas (pink) for foraging along WA coast as determined by Thums et al (2022); inset shows overlap of the OA

4.3.3.2 Reptiles

Based on searches of the online PMST (Ref. 53; appendix b), the threatened and/or migratory reptile species shown in Table 4-7 may be present within the EMBA. The full list of marine species identified from the PMST is provided in appendix b. Habitat critical to survival of marine turtle species, or BIAs associated with regionally significant marine reptile species, are listed in Table 4-7 and Table 4-8 respectively.

For the threatened and/or migratory species with habitat critical to survival or BIAs within the OA or Sound EMBA (i.e. EMBAs associated with planned activities), additional information has been provided in the following subsections.

While both the Leaf-scaled Seasnake and Short-nosed Seasnake were identified within the PMST as potentially being present within the OA and Sound EMBA, they are not considered likely to be present. Both the Short-nosed Seasnake and Leaf-scaled Seasnake occur primarily on reef flats or in shallow waters of the outer reef edges to depths of 10 m (Ref. 302; Ref. 303). The OA occurs in water depths of ~25–1,350 m with no emergent reef features.

Table 4-7: Presence of listed threatened and/or migratory reptiles

Common name (EPBC protected status)	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
Turtles			
Flatback Turtle *(Vulnerable, migratory)*	✓	✓	✓
Green Turtle *(Vulnerable, migratory)*	✓	✓	✓
Hawksbill Turtle *(Vulnerable, migratory)*	✓	✓	✓
Leatherback Turtle *(Endangered, migratory)*	✓	✓	✓
Loggerhead Turtle *(Endangered, migratory)*	✓	✓	✓
Seasnakes			
Leaf-scaled Seasnake *(Critically Endangered)*	✓	✓	✓
Short-nosed Seasnake *(Critically Endangered)*	✓	✓	✓

Table 4-8: Habitat critical to the survival of marine turtles

Common Name	Nesting location^	Internesting buffer^	Seasonal Presence^	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
Flatback Turtle	Barrow Island, Montebello Islands, coastal islands from Cape Preston to Locker Island.	60 km	Oct–Mar	✓	✓	✓

Common Name	Nesting location^	Internesting buffer^	Seasonal Presence^	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
	Dampier Archipelago, including Delambre Island and Hauy Island.	60 km	Oct–Mar			✓
Green Turtle	Barrow Island, Montebello Islands, Serrurier Island, and Thevenard Island.	20 km	Nov–Mar	✓	✓	✓
	Dampier Archipelago.	20 km	Nov–Mar			✓
	Exmouth Gulf and Ningaloo coast.	20 km	Nov–Mar			✓
Hawksbill Turtle	Cape Preston to mouth of Exmouth Gulf including Montebello Islands and Lowendal Islands.	20 km	Oct–Feb	✓	✓	✓
	Dampier Archipelago, including Delambre Island and Rosemary Island.	20 km	Oct–Feb			✓
Loggerhead Turtle	Exmouth Gulf and Ningaloo coast	20 km	Nov - May			✓

^*Source: Ref. 56 and Ref. 179*

Table 4-9: Presence of BIAs for reptiles

Common Name	BIA Behaviour	Seasonal Presence^	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
Flatback Turtle	Aggregation	(Not defined in database)			✓	✓
	Foraging	Early summer			✓	✓
		(Not defined in database)		✓	✓	✓
		Observations during July, no evidence of turtle activity. October to November for Solitary, Steamboat, Carey, Preston Islands and Cape Preston.				✓
	Internesting	(Not defined in database)			✓	✓
	Internesting buffer	Early summer	✓	✓	✓	✓
		January			✓	✓
		Summer	✓	✓	✓	✓

Common Name	BIA Behaviour	Seasonal Presence^	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
		Summer (nesting/internesting) year round			✓	✓
	Mating	Early summer			✓	✓
		(Not defined in database)		✓	✓	✓
	Nesting	Early summer			✓	✓
		Short summer nesting season, predominantly Nov–Mar with peak in Jan		✓	✓	✓
		Summer			✓	✓
Green Turtle	Aggregation	(Not defined in database)			✓	✓
	Basking	Summer		✓	✓	✓
	Foraging	Early summer			✓	✓
		Observations during July, no evidence of turtle activity. October to November for Solitary, Steamboat, Carey, Preston Islands and Cape Preston.				✓
		Summer			✓	✓
		Year round		✓	✓	✓
		(Not defined in database)			✓	✓
	Internesting	Summer			✓	✓
		(Not defined in database)		✓	✓	✓
	Internesting buffer	Early summer		✓	✓	✓
		Summer	✓	✓	✓	✓
	Mating	Early summer			✓	✓
		Summer		✓	✓	✓
		(Not defined in database)			✓	✓
	Nesting	Early summer			✓	✓
		Summer		✓	✓	✓
Hawksbill Turtle	Foraging	Early summer			✓	✓
		Observations during July, no evidence of turtle activity. October to November for Solitary, Steamboat, Carey, Preston Islands and Cape Preston.				✓
		Spring and early summer, peak nesting October			✓	✓
		Year round		✓	✓	✓

Common Name	BIA Behaviour	Seasonal Presence^	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
	Internesting	Spring and early summer, peak nesting Oct			✓	✓
	Internesting buffer	Early in Summer		✓	✓	✓
		Spring and early summer	✓	✓	✓	✓
		Year round			✓	✓
		(Not defined in database)		✓	✓	✓
	Mating	Early in Summer			✓	✓
		Spring and early summer, peak nesting October			✓	✓
		Year round		✓	✓	✓
	Nesting	Early in summer			✓	✓
		Peak nesting in spring and early summer		✓	✓	✓
		Year round			✓	✓
		(Not defined in database)			✓	✓
Loggerhead Turtle	Internesting buffer	(Not defined in database)		✓	✓	✓
	Nesting	(Not defined in database)			✓	✓

^*Source: Ref. 178*

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 habitat critical to the survival of the species, as is the 60 km internesting buffer around the Montebello Islands (Ref. 56, Figure 4-9).

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. 200; Ref. 201). Limited nesting activity has also been recorded on the south-west, north, and north-east beaches of Barrow Island (Ref. 202).

During internesting, turtles remain close to the nesting beach or rookery (Ref. 56). The 60 km internesting buffer defined within the *Recovery Plan for Marine Turtles in Australia* (Ref. 56) is based primarily on the movements of tagged internesting Flatback Turtles in WA (Ref. 203). 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. 203). 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. 75) 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, including Barrow Island, located at closest ~5.5 km from the OA. The results showed internesting Flatback Turtles from all rookeries remained within water depths of <44 m, with a mean depth of <10 m (Ref. 75). 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. 75). The majority of the OA and Sound EMBA are located in waters classified as unsuitable for internesting Flatback Turtles.

Another recent study involving satellite tracking data for 11 Flatback Turtles following nesting on the Lacepede Islands (Ref. 204) 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. 205; Ref. 206; Ref. 207) have also presented findings that internesting behaviour was only observed in water depths of <40 m. One of these studies (Ref. 206) 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 OA is located in water depths of ~25–1,350 m, and is at closest ~5.5 km from the west coast of Barrow Island, and ~20 km from the Montebello Islands. Flatback Turtles do not nest on the west coast of Barrow Island (Ref. 200; Ref. 201, Ref. 202), as such the internesting habitat within the pipeline route is expected to be low. Additionally, the majority of the OA is located in deeper waters and further offshore than internesting behaviours were observed in any of the previous studies (Ref. 203; Ref. 75; Ref. 204; Ref. 205; Ref. 206; Ref. 207), therefore, it is considered highly unlikely that internesting Flatback Turtles will occur within the majority of the OA.

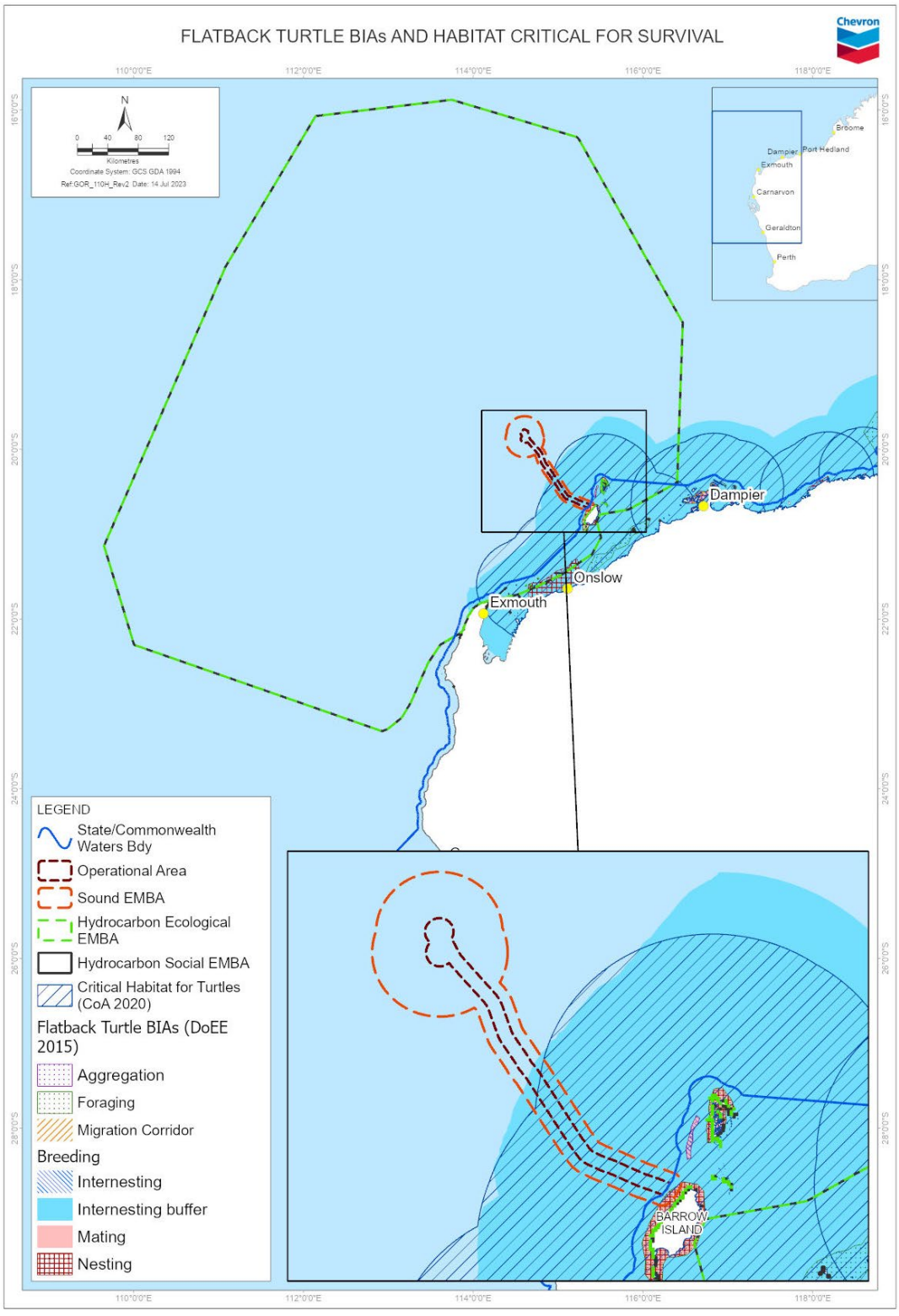


Figure 4-9: Biologically important areas and habitat critical to the survival of the species, for Flatback Turtles

4.3.3.2.2 Green Turtle

The Montebello Islands and Barrow Island supports Green Turtle nesting, occurring from November to March. The Montebello Islands are identified as nesting habitat critical to the survival of the species, as is the 20 km internesting buffer around the Montebello Islands (Ref. 56, Figure 4-10).

The NWS stock is one of the largest green turtle stocks in the world and the largest in the Indian Ocean (Ref. 208). Nesting occurs over a large geographic range with nesting on offshore islands and the mainland. Green Turtle nesting usually occurs on the west and north-east coasts of Barrow Island between October and March each year, with a remigration interval of approximately five years (Ref. 209) and peak nesting activity occurring between December and February (Ref. 210; Ref. 200).

During internesting, turtles remain close to the nesting beach or rookery (Ref. 56). Analysis of satellite tracking data for Barrow Island on Green Turtles suggests internesting habitat occurs throughout the rocky intertidal and subtidal platforms common on the west coast, around to the north-eastern beaches and waters (Ref. 210; Ref. 200).Satellite tracking of internesting Green Turtles on Barrow Island were recorded to remain in shallow water within 5 km of Barrow Island (Ref. 200).

Satellite tracking of post-nesting female Green Turtles has shown that Green Turtles nesting on Barrow Island and Sandy Island (Scott Reef, Western Australia) feed between 200 km and 1,000 km from their nesting beaches (Ref. 200). Following nesting at Barrow Island, Green Turtles that were tracked migrating to foraging grounds extending from Legendre Island in the Dampier Archipelago to waters in the southern Kimberley (Ref. 200).

As Green Turtle nesting occurs on the west coast of Barrow Island, and as the OA at its closest is ~5.5 km from the west coast, there is a potential to encounter turtles within the OA and Sound EMBA. During internesting turtles remain close to the nesting beach or rookery (Ref. 56). Once breeding and nesting is complete, turtles return to their favoured foraging areas (Ref. 211). As such, it is expected that any presence of these species within the OA would be of a transitory nature.

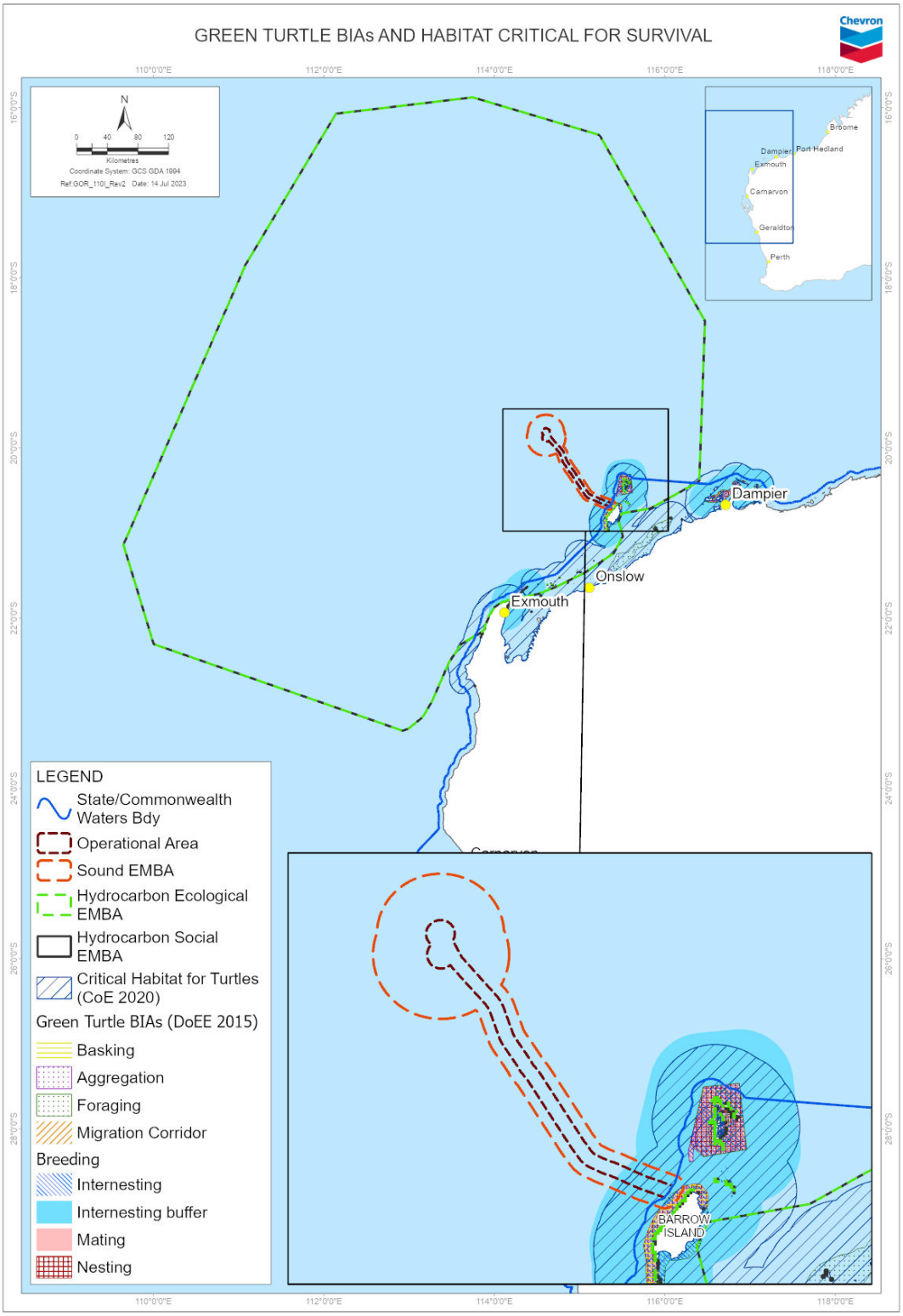


Figure 4-10: Biologically important areas and habitat critical to the survival of the species, for Green Turtles

4.3.3.2.3 Hawksbill Turtle

The Montebello Islands and Lowendal Islands are identified as nesting habitat critical to the survival of the species, as is the 20 km internesting buffer around the Islands (Ref. 56). Hawksbill Turtles are expected to be present within these areas between October and February (Ref. 56, Figure 4-11)

The Western Australia Hawksbill Turtle stock is one of the three stocks within Australia (Ref. 56).. Most of the nesting for this stock is located in the Pilbara (Ref. 56). 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. 212). The estimated size of the reproductive population of WA stock is small (Ref. 254). 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 13,00 in the Montebello Islands (Ref. 254).

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. 214) and Hawksbill Turtles typically have an internesting interval of 14.5 days and a remigration interval of approximately three years (Ref. 210; Ref. 212).

During internesting turtles remain close to the nesting beach or rookery (Ref. 56). Satellite tracking of Hawksbill Turtles found that they remained in shallow coastal waters (<10 m deep) post nesting (Ref. 200).

Although BIAs have been identified (Table 4-9), Hawksbill Turtle mating, internesting, and foraging grounds have not been identified for Barrow Island (Ref. 254). However, data from Hawksbill Turtles tracked from nearby Varanus Island indicate potential internesting habitat in waters north-east of Barrow Island (Ref. 200). This internesting is consistent with the internesting habitat critical for the survival of the species that has been identified (Table 4-8).

As Hawksbill Turtle nesting occurs predominantly on east coast beaches on Barrow Island, it is expected that any presence of these species within the OA would be of a transitory nature.

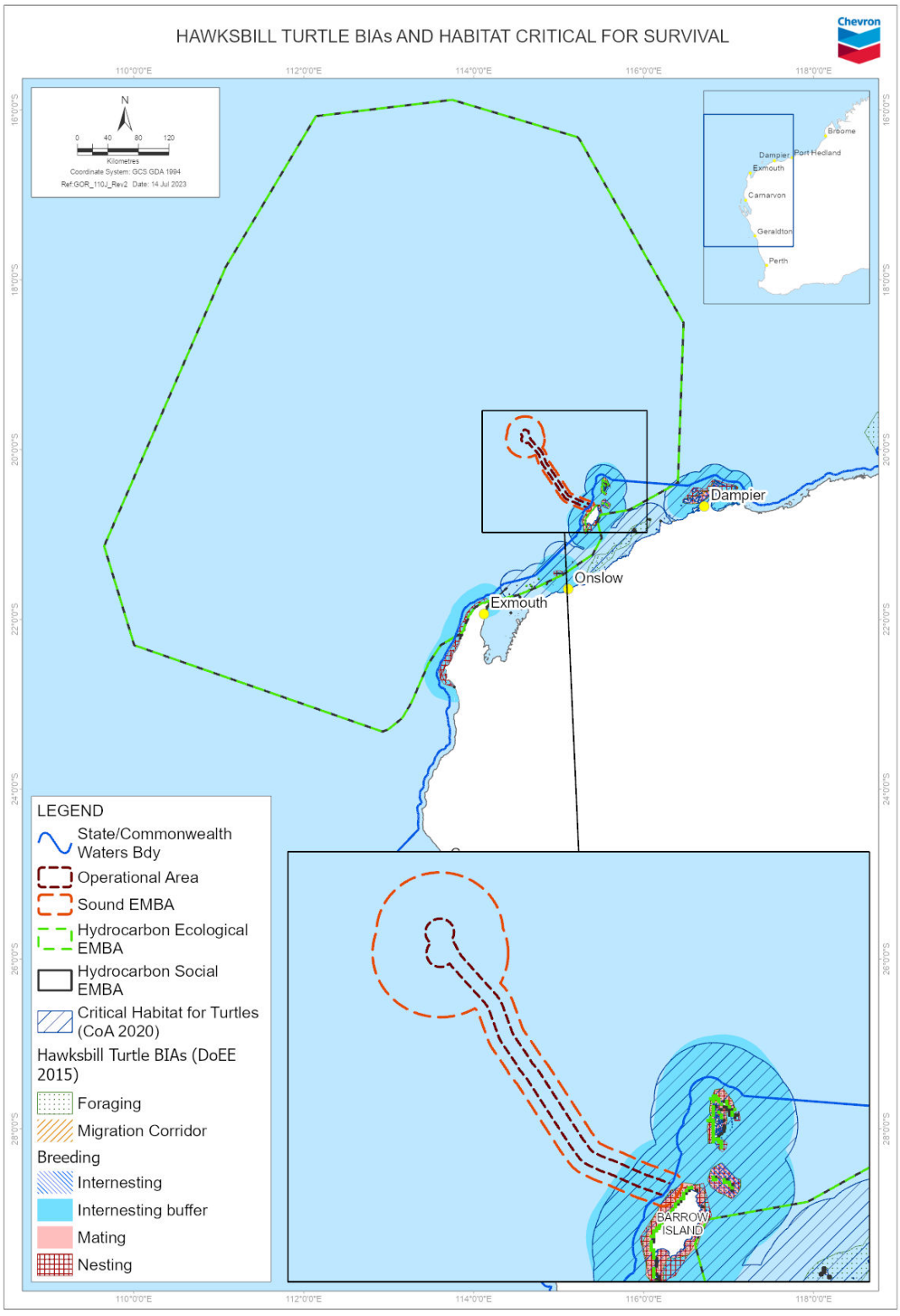


Figure 4-11: Biologically important areas and habitat critical to the survival of the species, for Hawksbill Turtles

4.3.3.2.4 Loggerhead Turtle

Loggerhead Turtles are globally distributed in tropical, sub-tropical waters and temperate waters. Loggerheads are carnivorous, feeding primarily on benthic invertebrates in habitat ranging from nearshore to 55 m depth (Ref. 215). Loggerhead Turtles forage in all coastal states and the Northern Territory (Ref. 56, Figure 4-12).

The primary Australian breeding areas for Loggerhead Turtles are within southern Queensland and Western Australia (Ref. 216). Loggerhead Turtles will migrate over distances in excess of 1,000 km and show a strong fidelity to their feeding and breeding areas (Ref. 213).

In WA nesting occurs from Shark Bay (including on the mainland near Steep Point) to the North West Cape with major nesting at Dirk Hartog Island; Gnaraloo Bay; Murion Island; and the beaches of the North West Cape (Ref. 217). Occasional late summer nesting crawls have also been recorded as far north as Barrow Island, the Lowendal Islands and Dampier Archipelago (Ref. 218). During internesting turtles remain close to the nesting beach or rookery (Ref. 56). Once breeding and nesting is complete, turtles return to their favoured foraging areas (Ref. 211). The closest known foraging area is ~350 km northeast of the OA. As such, it is expected that any presence of these species within the OA would be of a transitory nature.

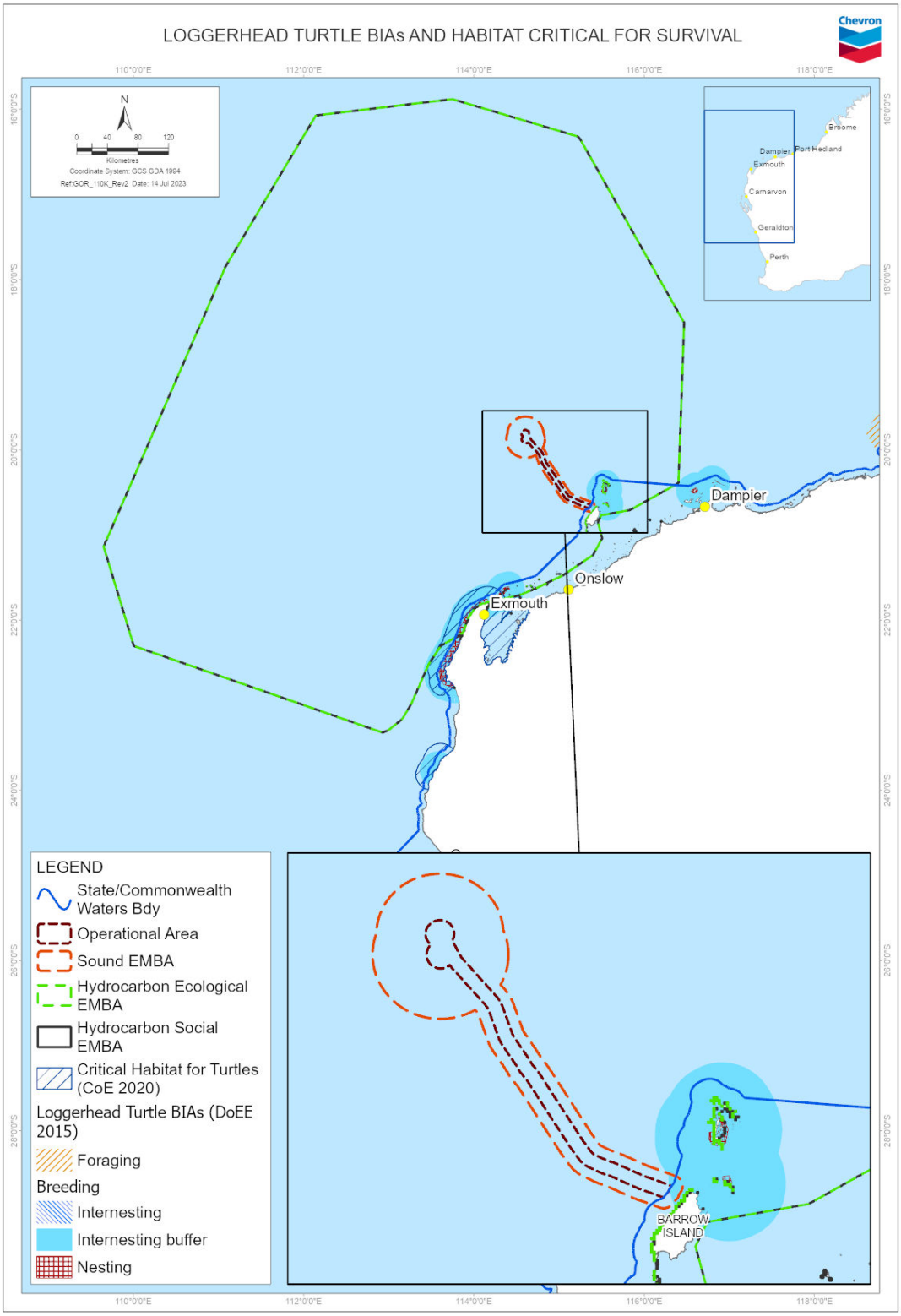


Figure 4-12: Biologically important areas and habitat critical to the survival of the species, for Loggerhead Turtles

4.3.3.3 Fishes, including sharks and rays

Based on searches of online PMST (Ref. 53; appendix b), the threatened and/or migratory fish species shown in Table 4-10 may be present within the EMBA. The full list of marine species identified from the PMST is provided in appendix b. BIAs associated with regionally significant fish species are listed in Table 4-11.

For the threatened and/or migratory species with BIAs within the OA or Sound EMBA (i.e. EMBAs associated with planned activities), additional information has been provided in the following subsections.

A review of ROV video footage recorded between 2015 and 2018 along the Jansz-Io pipeline in water depths ~737–1,348 m (Ref. 290) indicated:

- no threatened and/or migratory fish, shark, or ray species were observed
- generally low diversity and abundance of bony and cartilaginous fish compared to shallow nearshore regions; with assemblages dominated by Macrouridae (deep sea fishes) and Synaphobranchidae (cutthroat eels) as found at similar depth ranges in other regions
- some spatial differences in assemblage between non-infrastructure and infrastructure sites, with greater overall abundances, species richness, and species diversity generally associated with infrastructure
- a decrease in richness, abundance, and diversity with depth as found in other studies both in the north-west of Western Australia and elsewhere.

Table 4-10: Presence of listed threatened and/or migratory fishes, including sharks and rays

Common name (EPBC protected status)	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
Fish			
Southern Bluefin Tuna *(Conservation dependent)*	✓	✓	✓
Sharks			
Dwarf Sawfish *(Vulnerable, migratory)*	✓	✓	✓
Freshwater Sawfish *(Vulnerable, migratory)*	✓	✓	✓
Green Sawfish *(Vulnerable, migratory)*	✓	✓	✓
Grey Nurse Shark *(Vulnerable)*	✓	✓	✓
Little Gulper Shark *(Conservation dependent)*			✓
Longfin Mako *(Migratory)*	✓	✓	✓
Narrow Sawfish *(Migratory)*	✓	✓	✓
Oceanic Whitetip Shark *(Migratory)*	✓	✓	✓
Porbeagle *(Migratory)*			✓
Scalloped Hammerhead *(Conservation dependent)*	✓	✓	✓
Shortfin Mako *(Migratory)*	✓	✓	✓
Whale Shark *(Vulnerable)*	✓	✓	✓

Common name (EPBC protected status)	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
White Shark *(Vulnerable, migratory)*	✓	✓	✓
Rays			
Giant Manta Ray *(Migratory)*	✓	✓	✓
Reef Manta Ray *(Migratory)*	✓	✓	✓

Table 4-11: Presence of BIAs for fishes, including sharks and rays

Common Name	BIA Behaviour	Seasonal Presence^	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
Whale Shark	Foraging	Spring	✓	✓	✓
	Foraging (high-density prey)	Apr–Jun, autumn			✓

^*Source: Ref. 178*

4.3.3.3.1 Whale Shark

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. 219, Figure 4-13).

Whale Sharks have a global distribution in tropical and warm temperate waters, including within Australian waters (mainly Northern Territory, Queensland and northern WA) (Ref. 220; Ref. 219). 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. 219). Ningaloo Reef is considered the main known seasonal aggregation area (Ref. 66). Whale Sharks aggregate off Ningaloo Reef between March and July each year to feed (Ref. 220; Ref. 221). Their presence off Ningaloo Reef has been linked to coral mass spawning timing (Ref. 220). The Whale Shark is a suction filter feeder, with a diet consisting of planktonic and nektonic prey, and feeds at or close to the water's surface by swimming forward with mouth agape, sucking in prey (Ref. 220). 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. 221):

- 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.

Given that Whale Shark foraging within the BIA typically occurs between July and November, there is potential for an overlap with planned activities.

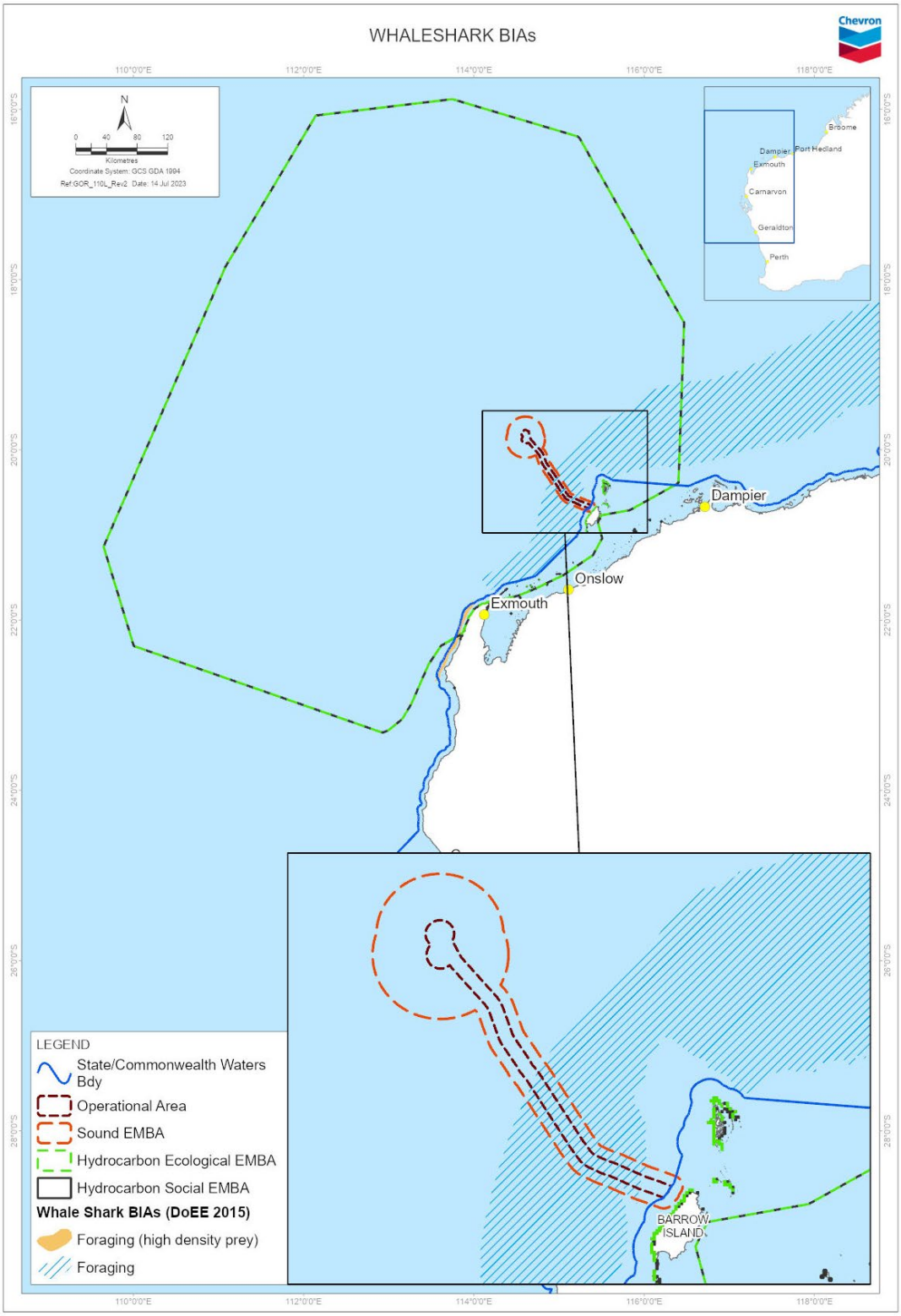


Figure 4-13: Biologically important areas for Whale Sharks

4.3.3.4 Seabirds and shorebirds

Based on searches of the online PMST (Ref. 53; appendix b), the threatened and/or migratory seabird and shorebird species shown in Table 4-12 may be present within the EMBA. The full list of marine species identified from the PMST is provided in appendix b. BIAs associated with regionally significant seabird and shorebird species are listed in Table 4-13.

For the threatened and/or migratory species with BIAs within the OA (i.e. EMBAs associated with planned activities), additional information has been provided in the following subsections.

Table 4-12: Presence of listed threatened and/or migratory seabirds and shorebirds

Common name (EPBC protected status)	OA	Hydrocarbon Ecological and Social EMBAs
Abbott's Booby *(Endangered)*		✓
Asian Dowitcher (M*igratory*)		✓
Australian Fairy Tern *(Vulnerable)*	✓	✓
Australian Painted Snipe *(Endangered)*		✓
Bar-tailed Godwit (M*igratory*)		✓
Black-browed Albatross *(Vulnerable, migratory)*		✓
Bridled Tern (M*igratory*)		✓
Campbell Albatross *(Vulnerable, migratory)*		✓
Caspian Tern (M*igratory*)		✓
Christmas Island White-tailed Tropicbird *(Endangered)*	✓	✓
Common Greenshank (M*igratory*)		✓
Common Noddy (M*igratory*)	✓	✓
Common Sandpiper (M*igratory*)	✓	✓
Curlew Sandpiper *(Critically endangered, migratory)*	✓	✓
Eastern Curlew *(Critically endangered, migratory)*	✓	✓
Flesh-footed Shearwater (M*igratory*)		✓
Fork-tailed Swift (M*igratory*)	✓	✓
Great Frigatebird (M*igratory*)		✓
Greater Crested Tern (M*igratory*)		✓
Greater Sand Plover *(Vulnerable, migratory)*		✓
Indian Yellow-nosed Albatross *(Vulnerable, migratory)*		✓
Lesser Frigatebird (M*igratory*)	✓	✓
Little Tern (M*igratory*)		✓
Northern Siberian Bar-tailed Godwit *(Critically endangered)*		✓
Oriental Plover (M*igratory*)		✓
Oriental Pratincole (M*igratory*)		✓

Common name (EPBC protected status)	OA	Hydrocarbon Ecological and Social EMBAs
Osprey (M*igratory*)		✓
Pectoral Sandpiper (M*igratory*)	✓	✓
Red Goshawk *(Endangered)*		✓
Red Knot *(Endangered, migratory)*	✓	✓
Roseate Tern (M*igratory*)	✓	✓
Sharp-tailed Sandpiper (M*igratory*)	✓	✓
Shy Albatross *(Endangered, migratory)*		✓
Soft-plumaged Petrel *(Vulnerable)*		✓
Southern Giant-Petrel *(Endangered, migratory)*	✓	✓
Streaked Shearwater (M*igratory*)	✓	✓
Wedge-tailed Shearwater (M*igratory*)		✓
White-capped Albatross *(Vulnerable, migratory)*		✓
White-tailed Tropicbird (M*igratory*)	✓	✓
White-winged Fairy-wren (Barrow Island) *(Vulnerable)*		✓

Table 4-13: Presence of BIAs for seabirds and shorebirds

Common Name	BIA Behaviour	Seasonal Presence^	OA	Hydrocarbon Ecological and Social EMBAs
Fairy Tern	Breeding	Breeding from July to late September	✓	✓
Lesser Crested Tern	Breeding	Breeding from March to June	✓	✓
Roseate Tern	Breeding	Breeding from mid-March to July	✓	✓
Wedge-tailed Shearwater	Breeding	Breeding visitor; arrives in mid-August and leaves Pilbara in April	✓	✓

^*Source: Ref. 178*

4.3.3.4.1 Fairy Tern

Behaviours used to define BIAs for seabirds in Commonwealth marine areas include breeding with a foraging buffer, and roosting (Ref. 237). The BIAs for this species are buffers around islands that the species is known to nest on as they may forage in the waters surrounding the islands during nesting seasons (Figure 4-14).

The Fairy Tern has a large geographic range between Australia, New Zealand and New Caledonia. Three subspecies have been identified based on phenotypic, genotypic and geographic differences (Ref. 76), only one of which (the Australian

Fairy Tern) occurs in WA. The Australian Fairy Tern subspecies has been identified in Table 4-12 as having the potential to be present within the OA, and is listed as vulnerable under the EPBC Act.

The Australian Fairy Tern has been found in embayments of a variety of habitats including offshore, estuarine, or lacustrine (lake) islands, wetlands and mainland coastline (Ref. 234). The Australian Fairy Tern nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation (Ref. 246).

Within WA, there appear to be two subpopulations:

- a sedentary subpopulation based along the Pilbara and upper Gascoyne coasts from Exmouth Gulf to the Dampier Archipelago, including Barrow, Montebello, and Lowendal islands; these Australian Fairy Terns nest from late-July to late-September
- a migratory subpopulation that disperses south along the coast from Shark Bay to breed between the Houtman Abrolhos Islands to the Recherche Archipelago between September and May, with active breeding flocks appearing at various locations between October and February (Ref. 304).

Australian Fairy Terns are reported from Barrow Island throughout the year and primarily from the south-east to south-west of the island, with high counts between November and April (Ref. 242). Australian Fairy Terns may nest on offshore islands between Barrow Island and the Montebello Islands (Ref. 305), including intermittently nesting on North and/or South Double Island (Ref. 242).

Australian Fairy Terns are diurnal plunge diving feeders that predate exclusively on small (<60 mm) surface schooling bait fishes throughout their range. Prey include species of sprats, hardy heads and larval prey of some demersal fish species (Ref. 234). Australian Fairy Terns feed almost entirely on fish in near-shore waters adjacent to nesting colonies and around island archipelagos (Ref. 304).

4.3.3.4.2 Roseate Tern

Behaviours used to define biologically important areas for seabirds in Commonwealth marine areas include breeding with a foraging buffer, and roosting (Ref. 237). The BIAs for this species are buffers around islands that this species is known to nest on (Figure 4-15). Bird species may forage in the waters surrounding the islands during nesting seasons. The closest foraging BIA for the Roseate Tern is >800 km south of the OA, near Kalbarri.

The Roseate Tern occurs in coastal and marine areas in subtropical and tropical seas. The species inhabits rocky and sandy beaches, coral reefs, sand cays and offshore islands (Ref. 234). The Roseate Tern is a migratory species, though the movement patterns are not well known. Birds are known to usually move away from breeding colonies following breeding, but their non-breeding range is not well defined (Ref. 234).

In the NWMR breeding populations of Roseate Terns have been recorded at Ashmore Reef, Napier Broome Bay, Bonaparte Archipelago, Lacepede Island, Bedout Island, Dampier Archipelago, Lowendall Island, Frazer Island, Koks Island, Mary Anne Island and Meade Island (Ref. 235).

Breeding in Western Australia occurs in two distinct periods:

- at some sites (including Montebello Islands), breeding occurs during both late spring-summer and late autumn-winter

- but at other sites (typically further south, including around Cervantes), breeding occurs only during autumn-winter (Ref. 239).

Roseate Terns breed in the Pilbara region from March to July and October (Ref. 178; Ref. 306).

Different islands can be chosen for the breeding colony from year to year. As Roseate Terns do not forage widely from their breeding colonies, suitable nesting islands may be chosen because of nearby aggregations of their pelagic fish prey (Ref. 236).

4.3.3.4.3 Wedge-tailed Shearwater

Behaviours used to define BIAs for seabirds in Commonwealth marine areas include breeding with a foraging buffer, and roosting (Ref. 237). The BIAs for this species are buffers around islands that this species is known to nest on (Figure 4-16). 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 (>580 km from the OA), near Carnarvon.

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. 238); out of an estimated global population of five million (Ref. 235). 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. 239; Ref. 240). Migration from the colony is very synchronous, but the return is less so (Ref. 240). The departure (early-April to early-May) of Wedge-tailed Shearwaters from WA may overlap with the timing of the installation activity. Once adults cease returning to feed their young, the young (fledgling) Wedge-tailed Shearwaters fledge and depart nests (Ref. 307; Ref. 308).

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. 235).

One of the closest colonies to the OA is Double Island (east of Barrow Island). Baseline monitoring (pre-construction of the Gorgon Gas Development) recorded ~20–50 Wedge-tailed Shearwater nesting burrows on North Double Island and ~300 on South Double Island (Ref. 241; Ref. 242). CAPL (Ref. 210; Ref. 242) provided an estimate of 500 burrows over a 2 ha portion of the north-eastern corner of South Double Island, supporting 5,000–10,000 pairs of Wedge-tailed Shearwaters.

This species forages relatively close to breeding islands and its diet consists of squid, fish, and crustaceans (Ref. 235). 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 day) trips (Ref. 240). 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. 240). It is noted that this same area is part of the

foraging extent used by the Wedge-tailed Shearwaters from both Pelsaert and Houtman Abrolhos islands) (Ref. 243; Ref. 240). The use of a bimodal foraging strategy suggests that prey availability close to the colony (i.e. areas that would be utilised on short trips) are inadequate for the large numbers of breeding shearwaters (Ref. 240).

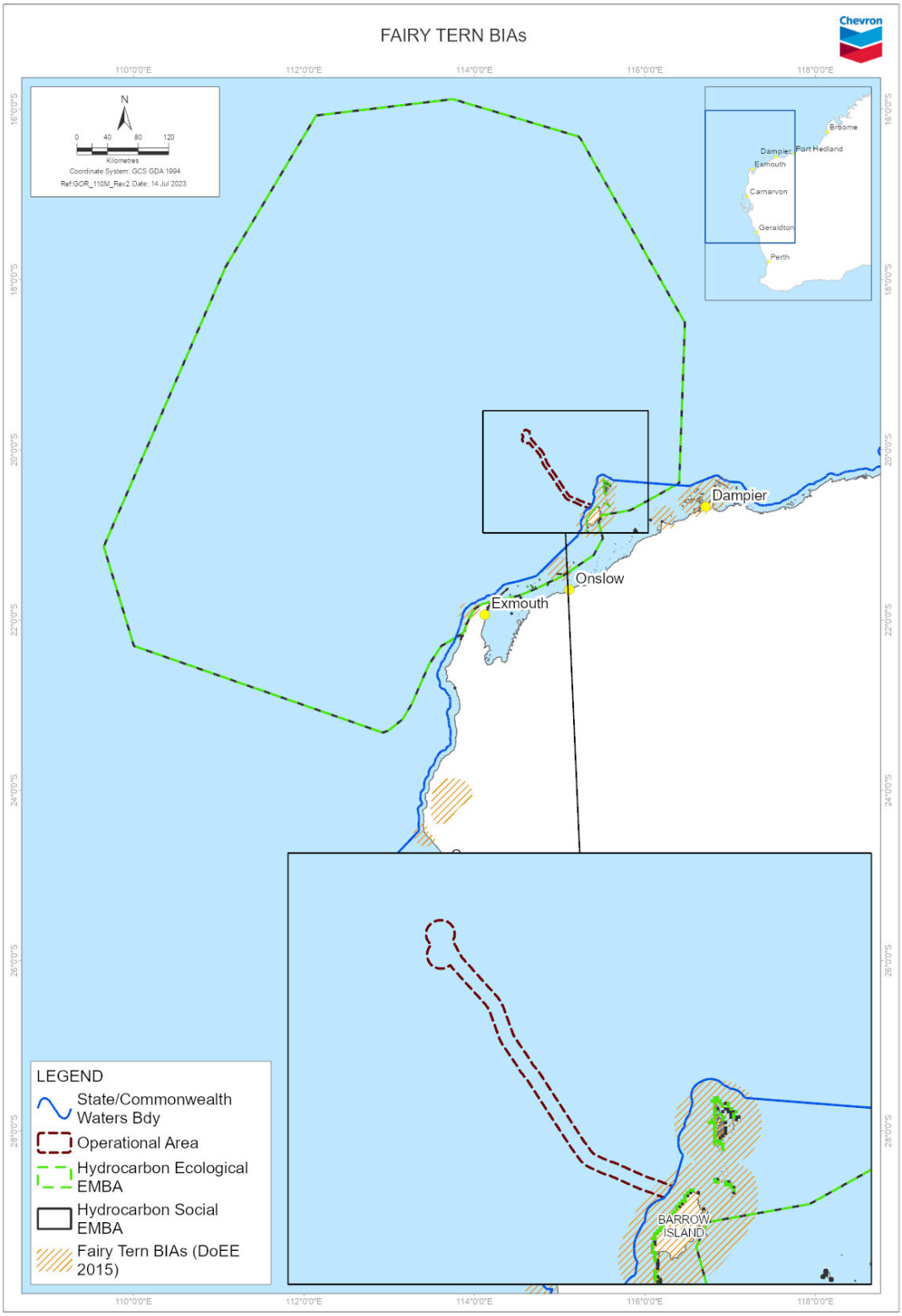


Figure 4-14: Biologically important areas for Fairy Terns

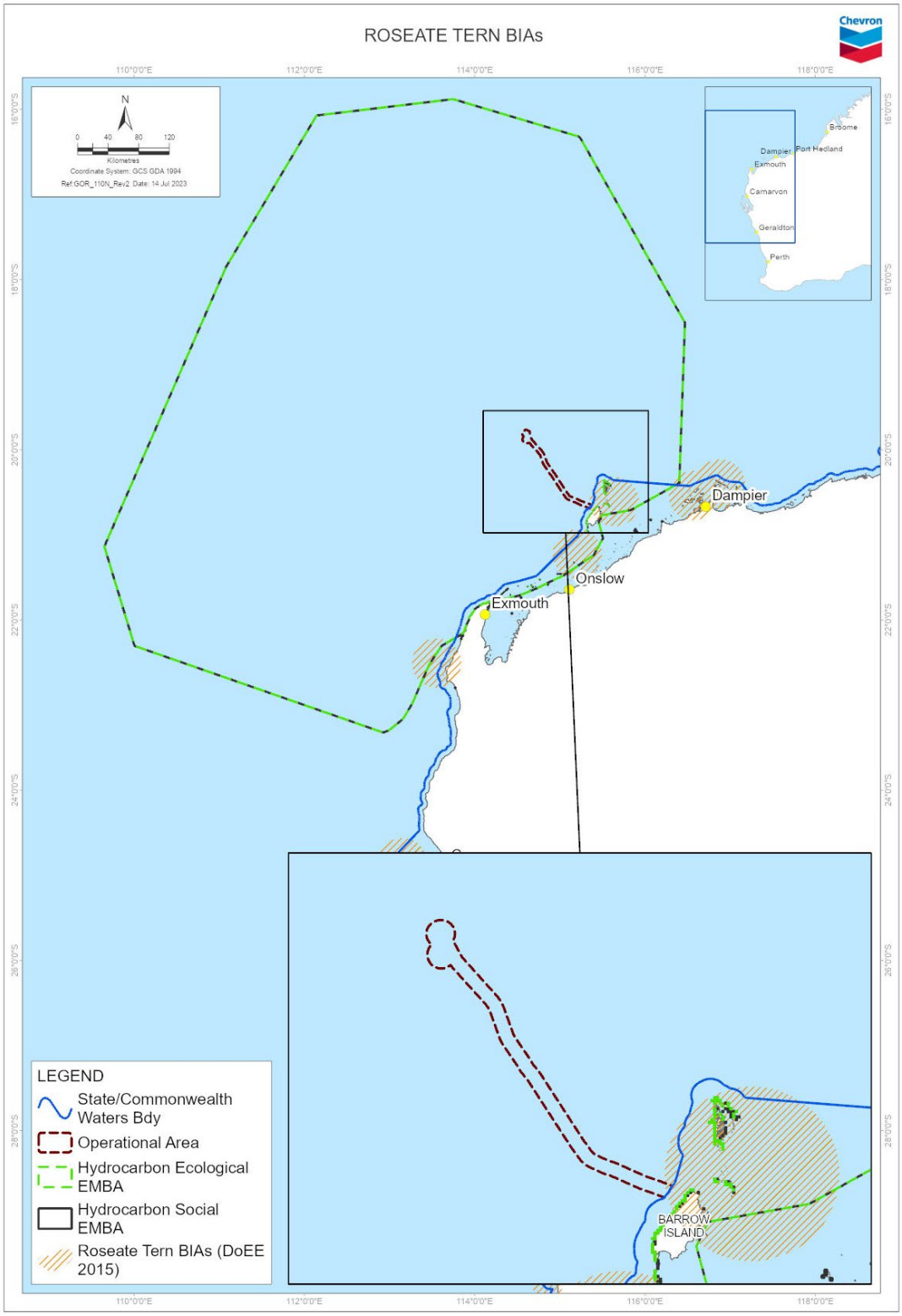


Figure 4-15: Biologically important areas for Roseate Tern

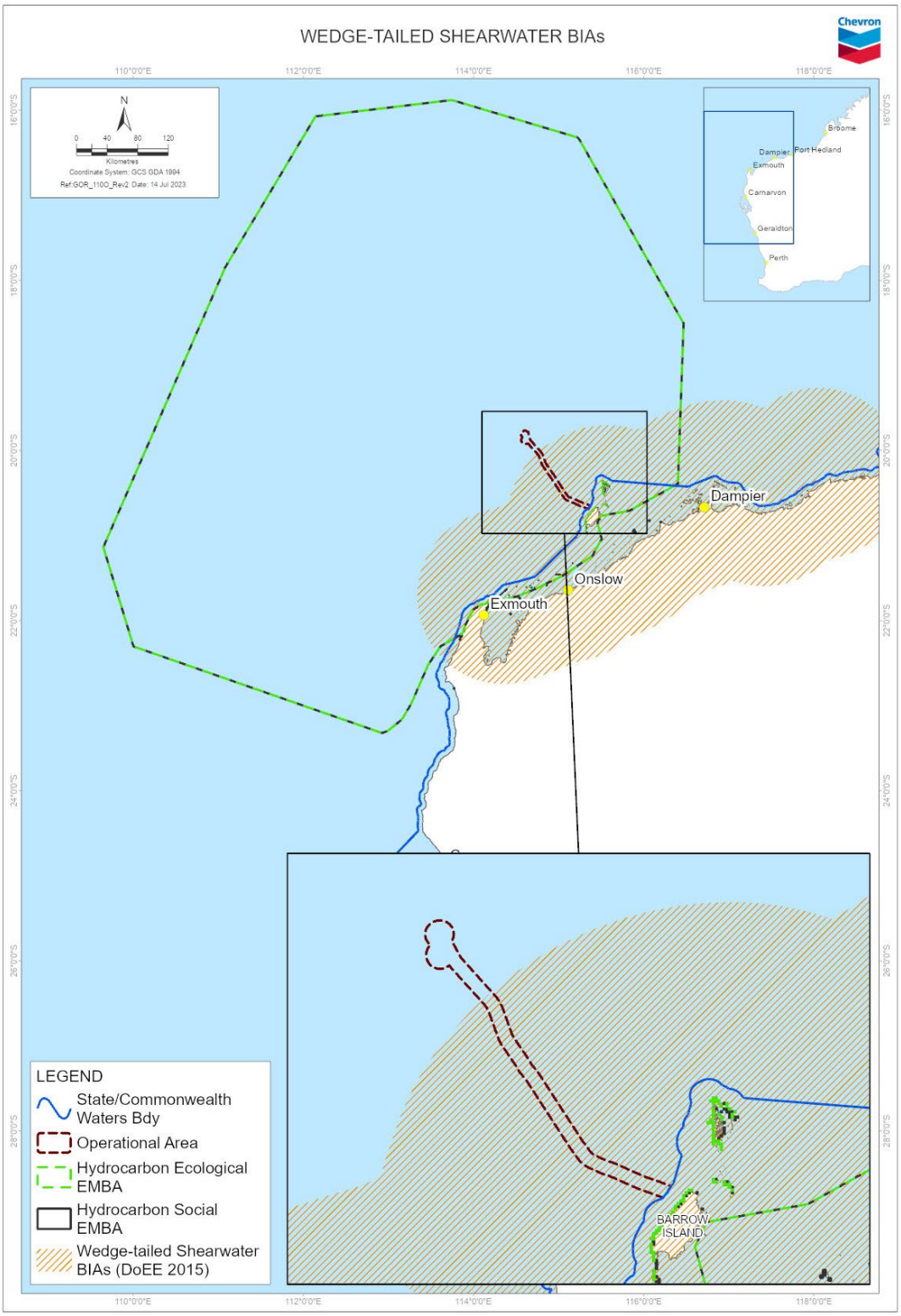


Figure 4-16: Biologically important areas for Wedge-tailed Shearwater

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 4-14: Seasonal presence of marine fauna with biologically important behaviours within the vicinity of the OA

Activity / Species	January	February	March	April	May	June	July	August	September	October	November	December
Petroleum activity												
Installation (FCS, SCSt, SCMS [2024])												
Installation (FCS [2025–2026])												
Installation (SCSt [2025–2026])												
Installation (HVSC [2025–2026])												
Pre-commissioning (SCSt, SCMS [2025–2026])												
Pre-commissioning, commissioning, and start-up (FCS [2026])												
Pre-commissioning (SCSt [2026])												
IMR	*(as required)*											
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]												
Green Turtle nesting and internesting[5]												
Hawksbill Turtle nesting and internesting[6]												
Loggerhead Turtle internesting[7]												
Australian Fairy Tern breeding[8]												
Lesser Crested Tern breeding[9]												
Roseate Tern breeding[10]												
Wedge-tailed Shearwater migration[11]												
Wedge-tailed Shearwater breeding[12]												

Activity / Species	January	February	March	April	May	June	July	August	September	October	November	December
Southern Bluefin Tuna spawning[13]												
	Indicative activity timing											
	Species may be present and display biologically important behaviour in the region											
	Predicted peak period											

1. *Humpback Whale migration along WA coast typically occurs between May and November (Ref. 300; Ref. 301). Predicted peak migration periods for the Montebello Islands region are late-July (northern) and early-September (southern) (Ref. 223).*
2. *Pygmy Blue Whales migrate north along the WA coast between February and August (Ref. 226; Ref. 232), with predicted highest densities in the Montebello Island region during May and June (Ref. 87). Pygmy Blue Whales migrate south between November and January (Ref. 226; Ref. 232), with predicted highest densities in the Montebello Island region during November and December (Ref. 87).*
3. *Migration occurs mainly between July and November along the 200 m isobath (Ref. 219). A foraging BIA for Whale Sharks is associated with the area around this isobath.*
4. *Seasonal presence within nesting and internesting habitat critical to the survival of Flatback Turtles in the Pilbara (including Barrow and Montebello islands) is predicted to occur between October and March (Ref. 56), with peak nesting activity on Barrow Island predicted between November and January (Ref. 254).*
5. *Seasonal presence within nesting and internesting habitat critical to the survival of Green Turtles in the North West Shelf (including Barrow and Montebello islands) is predicted to occur between November and March (Ref. 56), with peak nesting activity on Barrow Island predicted between December and February (Ref. 254).*
6. *Seasonal presence within nesting and internesting habitat critical to the survival of Hawksbill Turtles in WA (including Montebello and Lowendal islands) is predicted to occur between October and February (Ref. 56), with peak nesting activity on Barrow Island predicted in October (Ref. 254).*
7. *Seasonal presence within internesting habitat critical to the survival of Loggerhead Turtles in WA (including Muiron Islands) is predicted to occur between November and May (Ref. 56),*
8. *The Pilbara and upper Gascoyne sedentary population of Australian Fairy Terns nests from late-July to late-September (Ref. 304).*
9. *Lesser Crested Terns breed in the Pilbara region from March to June (Ref. 178; Ref. 306).*
10. *Roseate Terns breed in the Pilbara region from March to July and October (Ref. 178; Ref. 306).*
11. *Wedge-tailed Shearwaters typically begin arriving at their WA colonies around August; and then leave nests in early-April to early-May (Ref. 234; Ref. 240). Once adults cease returning to feed their young, the young (fledging) Wedge-tailed Shearwaters fledge and depart nests (Ref. 307; Ref. 308).*
12. *Wedge-tailed Shearwaters breed in the Pilbara region from November to April (Ref. 306); peak egg laying typically occurs during November (Ref. 234; Ref. 240).*
13. *Two peaks spawning periods have been observed in Southern Bluefin Tuna spawning ground: September–October and February–March (Ref. 338; Ref. 339).*

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. 174).

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. 175, Ref. 259). In the waters off the east coast of Barrow Island, turbidity and concentrations of suspended sediments were generally low (<5 mg/L) and indicative of clear water environments (Ref. 259).

The nearshore waters on the east coast of Barrow Island are generally oligotrophic, with temporal fluctuations in nutrients (Ref. 259; Ref. 263). Nutrient concentrations were generally below the ANZG default trigger values (nutrient enrichment) for tropical Australia, with occasional fluctuations of ammonia, nitrite+nitrate, and orthophosphate well above guideline values (Ref. 259; Ref. 263).

Water quality sampling undertaken in proximity of existing the Janz-Io field infrastructure showed that concentrations of hydrocarbons (total recoverable hydrocarbon [TRH), benzene, toluene, ethylbenzene and xylenes [BTEX] and polycylic aromatic hydrocarbon [PAH]) were below the laboratory limits of reporting (LoR) (Ref. 262). Dissolved metals concentrations were also below the respective ANZG default guideline values for 99% species protection (Ref. 262). 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. 176) The Wenziker et al (Ref. 176) study found no detectable levels of the sampled organics chemicals, and metals were below ANZG guidelines in the waters of the Dampier Archipelago. Pre-construction water quality sampling off the east coast of Barrow Island showed that concentrations of metals were typically consistently below the ANZG guideline trigger values for 99% species protection (Ref. 259). However, natural oil seeps are known to occur on the NWS (Ref. 175).

It is expected that these low levels of contamination would continue throughout the EMBA (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 high-sediment quality typically found in offshore waters away from anthropogenic sources of contamination.

Previous sediment quality data for Pilbara coastal waters (Ref. 177) indicated no detectable hydrocarbons, and with metal concentrations typically below the relevant ISQG-low guidelines.

Sediment quality sampling during 2014 and 2015 off the east coast of Barrow Island showed that except for nickel in one reference site sample, total metal concentrations of all sediment samples were below respective laboratory LoR and/or Interim Sediment Quality Guideline (ISQG)-Low trigger values (Ref. 259). Sediment tributyltin (TBT) concentrations were all below the laboratory LoR and the ISQG-Low trigger value, except for one sample in each of the 2014 and 2015 surveys (Ref. 259). Total petroleum hydrocarbons (TPH) and Total polycylic aromatic hydrocarbon (PAH) concentrations were all below the LoR in 2014 and at very low concentrations in 2015 samples (with a much lower LoR). Once normalised for (very low) organic carbon content, six samples from 2015 were above ISQG-Low concentrations for benzo(a)pyrene, but well below the ISQG-High concentrations (Ref. 259).

Sediment quality sampling undertaken in proximity of existing the Janz-Io field infrastructure showed that concentrations of hydrocarbons (TRH, BTEX, and PAHs) were below the laboratory LoR (Ref. 262). Total metal concentrations were

also below the respective ANZG default guideline values (Ref. 262). It is expected that these low levels of contamination would continue throughout the EMBA (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 high air quality found in offshore areas, away from anthropogenic sources of contamination.

As part of the Ambient Air Quality Monitoring Program on Barrow Island, there were no recorded exceedances for nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), carbon monoxide (CO), hydrogen sulfide (H_2S), or aromatic hydrocarbons (benzene, toluene, ethylbenzene and xylene) against the relevant National Environmental Protection Measure (NEPM) standards (Ref. 260). There have been elevations of PM_{10} levels around facilities on Barrow Island, however these are likely associated with vehicle traffic and regional weather events (Ref. 260).

It is expected that these low levels of contamination would continue throughout the EMBA (unless within the immediate vicinity of an offshore point source).

4.3.5 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. 88). These uses of the NWMR make an important economic and social contribution to settlements along the coast (Ref. 88). Industry activities present with the EMBA are identified and described in Section 4.4.

4.3.5.1 Land use

The OA occurs offshore and does not have any interface with the coast. The Hydrocarbon EMBAs do interface with the coast, including parts of Barrow Island, the Montebello Islands, other Pilbara inshore islands, as well as some parts of the mainland coast along the North West Cape Peninsula and Cape Preston (Figure 4-1). Noting however that the Hydrocarbon EMBAs typically only extends landward to the high-water mark (HWM).

The land uses that may be present within the Hydrocarbon EMBAs 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 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. 180). Camping is permitted on some of the islands (with some restrictions during turtle nesting season) (Ref. 180; Ref. 181).

Barrow, Double, Middle, and Boodie islands are designated as State 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 man-made hazards, including the operation of an oilfield and the Gorgon Gas Project (Ref. 180). Camping is not permitted on any of these islands (Ref. 180).

The Pilbara Inshore Islands are a group of over 170 islands, islets, rocks and cays that lie between the bottom of Exmouth Gulf and the Regnard Islands near Cape Preston (Ref. 180). Some of the islands that occur within the Hydrocarbon EMBAs are classified as Nature Reserves (IUCN Ia) (Section 4.5.3). The islands are gazetted to both the LWM and HWM. The Pilbara Inshore Islands Nature Reserves are known as important breeding and resting places for migratory and resident shorebirds, seabirds and marine turtles (Ref. 180). Fishing, beach walks and wildlife viewing are types of activities that may occur in the Pilbara Inshore Islands Nature Reserves (Ref. 180). Camping is only permitted on certain islands and may require a permit (Ref. 180).

The Cape Range National Park (IUCN II) and Bundegi Coastal Park (IUCN) are protected under WA jurisdiction (Section 4.5.3), and they are part of the Ningaloo Coast World Heritage Area. Both terrestrial protected areas are gazetted to the HWM. Given the natural values of the parks and surrounding waters, recreational activities may occur. Walk trails, wildlife viewing, camping, beachcombing, swimming, snorkelling, beach fishing are types of activities that may occur (Ref. 222, Ref. 250).

Two Native Title determination (WCD2019/016 and WCD2018/006) extend into the Hydrocarbon EMBAs (Section 4.6). The determination areas contain places of special significance, such as spiritual and ceremonial sites and natural resources (Ref. 182).

There are no towns or cities located within the Hydrocarbon EMBAs.

4.3.5.2 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. 183).

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.

4.3.5.2.1 First Nations cultural activities, connections, and obligations

The land adjacent to the NWMR has been inhabited by First Nations people for at least 50,000 years, and they continue to use the NWMR and adjacent coastal resources, and have an ongoing connection to these areas (Ref. 88).

While outside the EMBA, 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. 309). 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)[17]. At the LGM sea level was ~125 m below present (Ref. 310); this coincides with the ancient coastline at 125 m depth KEF (see Section 4.3.6.1 for a description of this KEF). Part of the OA extends into water depths of <125 m (activities within these water depths are associated with the installation of part of the HVSC; Section 3.2.2), would therefore have been emergent land during the history of First Nations occupation.

Archaeological deposits from Boodie Cave on Barrow Island, reveal some of the oldest evidence for First Nations occupation of Australia, as well as illustrating the early use of marine resources (Ref. 311). First occupation on Barrow Island has been dated as occurring between 51.1 and 46.2 ka, overlapping with earliest dates for occupation of Australia (Ref. 311). There is evidence of marine resources (e.g. shellfish, fish) being incorporated into dietary assemblages by 42.5 ka on Barrow Island; which continued through all periods of occupation, despite fluctuating sea levels and associated extensions of the coastal plain (Ref. 311). The caves on Barrow Island (including Boodie Cave), and others on nearby Montebello Islands, were abandoned by 6.8 ka when rising sea levels reached their present levels, and the islands had become increasingly distant from the mainland coast (Ref. 311). Despite the isolation of Barrow Island from the mainland for most of the Holocene, Thalanyji knowledge holders refer to historic use of the island from both colonial-era fishing activities and indentured labour in the pearling grounds (Ref. 358).

Recent studies at Murujuga have demonstrated that archaeological material remains on the seabed, predating inundation by rising seas (Ref. 309; Ref. 313). Previous geomorphological work (which was based on the analysis of available 3D seismic data) on the mid to outer shelf regions proximal to Barrow Island, demonstrated the presence of a highly complex and geomorphically mature coastal landscape preserved at depths of 70–75 m below sea level, including coastal barrier dunes, lagoonal systems, tidal flats, and estuarine channels. (Ref. 310). Such feature preservation has significant geoheritage value (Ref. 310).

First Nations people have a culture that relates to a connectedness of land and sea in a holistic way (Ref. 314). 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. 184). For First Nations peoples, the term ‘Country’ includes both land and sea and the coastal areas that are connected with the traditional Country of a group or clan. Both Country and Sea Country, contain evidence of the ancient events by which all geographic features, animals, plants and people were created (Ref. 314). For example, Thalanyji knowledge holders reference Sea Country “between the islands of the shelf”, and “see the artifacts as an important manifestation of their ancestral use of, and connection to, the now-drowned coastal plain” (Ref. 358).

There are several coastal language groups or clans in northwest WA, including Thalanyji (associated with the Ashburton coastal plain, Exmouth Gulf, and surrounding areas). Based on engagement with First Nations groups, CAPL understands that Thalanyji (represented by the Buurabalayji Thalanyji Aboriginal Corporation (BTAC) Registered Native Title Body Corporate (RNTBC) for native title rights and interests), Mardudhunera and Yaburara people (represented by the Wirrawandi Aboriginal Corporation (WAC) RNTBC for native title rights and interests), and Mardathoonera Cultural Heritage Pty Ltd (MCH) have connections to Barrow Island (Table 4-15).

[17] The period of the LGM in Australia is described as 24 to 18 ka (Ref. 312).

Cultural heritage is not only comprised of tangible values; it also includes intangible values. Tangible values are those with a physical nature (such as artefacts and engravings); while intangible values are those that do not have a physical component (such as songlines and dances). Songlines are a feature of First Nations culture, linking people, places, and practices (Ref. 315). Certain songlines are referred to as 'Dreaming pathways' because of the tracks forged by Creator Spirits during the Dreaming; these Dreaming songlines have specific ancestral stories attached to them (Ref. 316). Nunn and Reid (Ref. 317) discuss how First Nations oral traditions have documented sea level rise over the last 7,000 years. Kearney et al. (Ref. 318) 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 song line from the mainland to Barrow Island has been referenced during studies involving Thalanyji knowledge holders (Ref. 358) and also identified by representatives of MCH during consultation (Table 4-15).

The cultural, customary, and spiritual significance of species and the ecological communities they form are diverse and varied for First Nations people and their stewardship of Country (Ref. 319). For example, some First Nations people have a strong connection to whales, which has significance as totemic ancestors to some groups (Ref. 319). 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. 319).

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. 184). Their commitment to 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. 184).

First Nations peoples of northwest WA engage in a diverse range of marine resource use activities, including hunting, egg collecting, fishing and gathering shellfish. Activities also continue on lands and waters where they have a ceremonial and spiritual connections (Ref. 184).

Consultation with First Nations groups and individuals has identified that Sea Country is of importance to their people (Table 4-15). These values include coastal areas, offshore islands, marine fauna, and traditional stories (e.g. it is believed that the Dreamtime serpent which created the rivers and inland springs is now in its resting place off the Pilbara coast; and as such, if the sea is protected, then the serpent is also being protected). It is acknowledged that First Nations people who are the custodians of this knowledge have the rights to decide how it is shared and used.

Underwater cultural heritage (UCH), including First Nations heritage, as protected under the UCH Act is discussed in Section 4.6.2).

Table 4-15: Cultural values or features identified through consultation

Source	Cultural value or feature
Baiyungu Aboriginal Corporation (BAC)	• Protecting land and Sea Country is a significant focus of the BAC • The Baiyungu coastal area, Sea Country, and adjacent islands are highly valuable to the Baiyungu people

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)	• Identified a connection with Barrow Island and surrounding waters; specific values described include: – the creation story starts on Barrow Island – Barrow Island is a place that connects saltwater and freshwater together – Barrow Island is connected to Murujuga; both are considered by MCH as women's places – Biggada Creek is significant and connected to the Fortescue River; and that the rock formations in the creek are protectors – women's sites and ancestor spirits are present on Barrow Island • Identified that Barrow Island was a hill in ancient times and is a sister hill to two hills on the mainland, and Old people would walk across before the sea levels rose and the island drifted; because of this, there will be artefacts and stories underwater • Identified cultural importance of traditional stories, songlines, ocean, and marine fauna: – the sea is the source of energy for all life, it holds the codes that are encrypted in each person's body, the songlines, and is the lifeforce for the world – the places where the saltwater from the sea and the freshwater from the land connect are where the biggest energy lines are, and that connection is a force of creation relevant to a Dreaming story – songlines extend out from the land, through the sea, and around the globe – songlines connect places, people, and animals to each other, creating migratory patterns for animals and telling animals of the right time to birth and eat – freshwater that flows underneath the seabed carries the songlines – there is a large energy line that exists off the coast of Murujuga and runs through the area that CAPL operates in – there are songlines that go through Barrow Island and offshore and connect Barrow Island to the mainland; this includes a whale songline – Mardudhunera people are connected to songlines—if the songlines are disrupted, their widdart (heart) is disconnected, like the whales, their feet get lost and they don't know where to go anymore

Source	Cultural value or feature
	• Country owns people and we are all connected by energy – different frequencies connect all beings on earth and everything on earth is connected – if you protect country, it will protect you – women hold the energy connected to water
Murujuga Aboriginal Corporation (MAC)	• No specific areas have been identified through consultation however MAC has noted the cultural importance of Sea Country and the need to ensure it is protected
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	• No specific areas have been identified through consultation however 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
Ngarluma Aboriginal Corporation (NAC)	• NAC has noted that offshore islands are culturally significant
Ngarluma Yindjibarndi Foundation Ltd (NYFL)	• The people from the land speak for and care about the marine animals, even if they are far out to sea • Identified that marine fauna, specifically whales, dugongs, and turtles are species of importance • The nature of many traditional narratives have origins and connection to the seascape, and that impacts to the seascape can have cultural repercussions • Presence and importance of intangible values, such as Barrimirndi (the serpent), which is an important part of dreaming for Ngarluma and Yindyibarndi people • Identified the interconnectedness of the cultural landscape, whereby Traditional Owners from the western Pilbara are held to account by other Nyambali (cultural bosses) when proponents impact land and sea • Cultural responsibilities transcend Native Title and other boundaries
Robe River Kuruma Aboriginal Corporation (RRKAC)	• None identified within the EMBA • Values beyond the EMBA boundary included: – the area within their Kuruma Marthudunera native title claim, Jajiwurra (Robe River) and the waters extending seaward from the river mouth – ecological integrity of Jajiwurra
Wirrawandi Aboriginal Corporation (WAC)	• The coastal area, Sea Country, and adjacent islands are highly valuable to the Yaburara and Mardudhunera people • Identified a connection to Barrow Island
Yamatji Marlpa Aboriginal Corporation (YMAC)	• No specific areas have been identified through consultation however YMAC has noted the cultural importance of Sea Country and the need to ensure it is protected
Yinggarda Aboriginal Corporation (YAC)	• Bernier Island#, Dorre Island# and associated Sea Country have been identified as significant to the Yinggarda people

^ – *Direction Island, Weld Island, North and South Islands, Ashburton Island, and Twin Islands are located outside the EMBA for this EP (~10 km, ~22 km, ~17 km, ~6 km, and ~13 km inshore of the EMBA respectively).*

Both Bernier and Dorre islands (located in Shark Bay) are located outside the EMBA for this EP (~160 km and ~190 km south respectively).

4.3.5.2.2 European 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. 88). British colonisation didn't begin in the Pilbara until 1860s, with pastoralism as the first major industry, followed by small ports and service centres (Ref. 88). The pearling industry began in the late-1800s, and remains a significant contributor to the economy of northwest WA (Ref. 88). 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. 88). Petroleum discovery and development commenced from the 1950s, with both onshore and offshore discoveries (Ref. 88).

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

4.3.6 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. 88). 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. 88).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. 164). 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. 88).

Conservation values of the Commonwealth marine area include:

- protected species and/or their habitat (Section 4.3.3)
- protected places including Australian Marine Parks (Section 4.5.1) and heritage places (Section 4.6)
- KEFs (Section 4.3.6.1).

4.3.6.1 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. 185):

- 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. 185).

The presence of KEFs within the EMBA, and a description of the KEFs values, are shown in Table 4-16: and Figure 4-17.

Table 4-16: Presence of KEFs

Key ecological feature	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
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. 88). 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 North West Shelf bioregion (Ref. 88). Benthic surveys undertaken by CAPL, identified that the habitat within this KEF in proximity to the OA consisted of smooth seabed with bioturbation and appeared devoid of biota (Ref. 262). **Values:** Unique sea floor feature with ecological properties of regional significance.			
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. 88). 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. 88). 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. 166).			

Key ecological feature	OA	Sound EMBA	Hydrocarbon Ecological and Social EMBAs
Values: Unique sea floor features 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. 186). 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 (750–1000 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. 88). Benthic survey undertaken by CAPL, identified that the habitat within this KEF in proximity to the OA comprise irregular and smooth seabed with bare substrates, discrete depressions of bare substrate, and scarps with bare substrate, were the most dominant benthic features (Ref. 262). **Values**: High levels of endemism.			
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 nautical mile 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. 88). Aggregations of whale sharks, manta rays, humpback whales, sea snakes, sharks, large predatory fish and seabirds are known to occur in this area (Ref. 88). **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. 88). The topography of the plateau (with valleys and channels), in addition to potentially constituting a range of benthic environments, may provide conduits for the movement of 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. 88). Fauna in the pelagic waters above the plateau are likely to include small pelagic species and nekton (Ref. 166). **Values:** Unique sea floor feature with ecological properties of regional significance.			

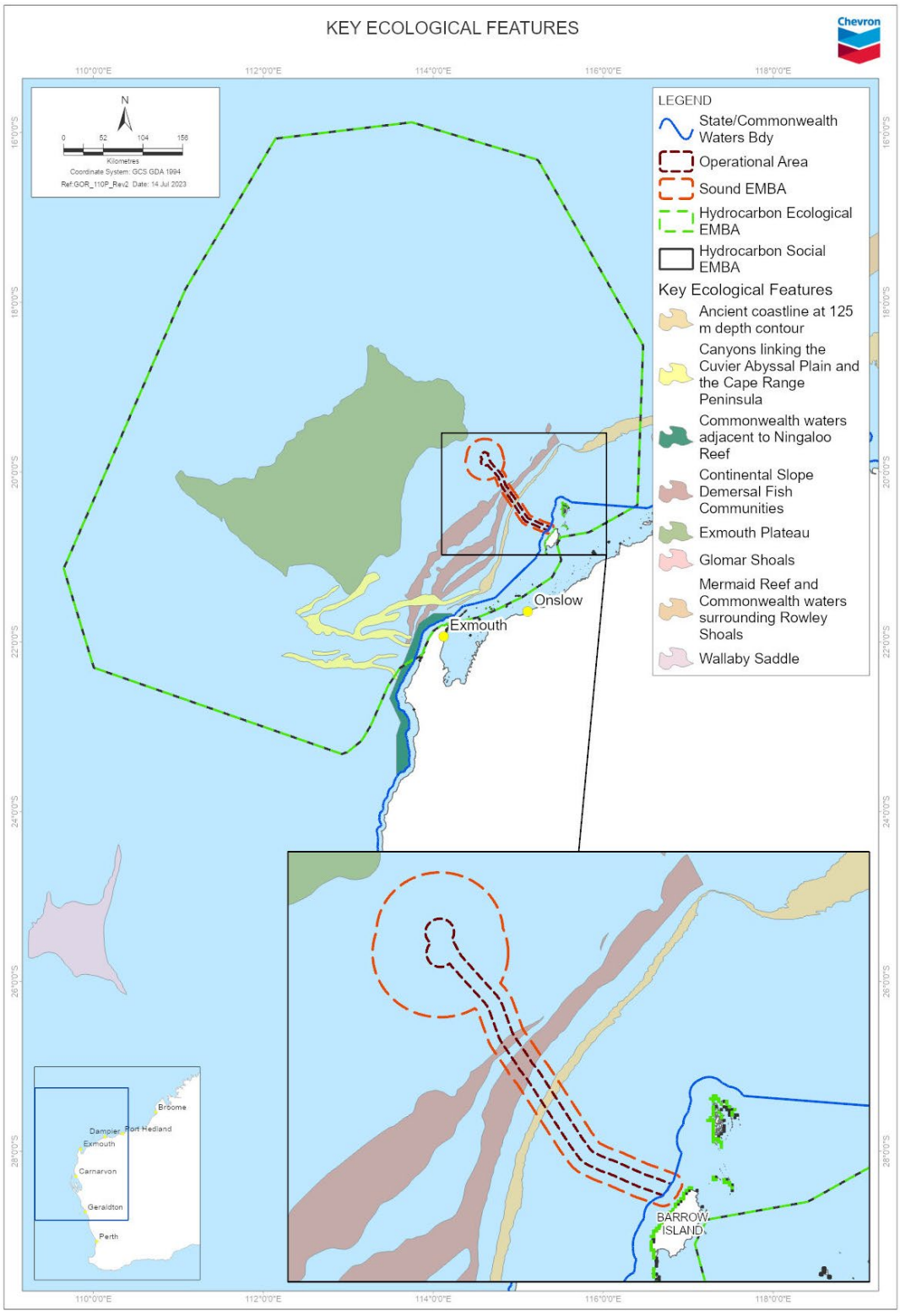


Figure 4-17: Key ecological features within the vicinity of the EMBA

4.3.7 Commonwealth land area

Commonwealth land[18] is a relevant value and sensitivity under the OPGGS(E)R. Based on spatial review and searches of the EPBC Act protected matters database (Ref. 53; appendix b) there is Commonwealth land associated with Department of Defence facilities that intersect with the Hydrocarbon EMBAs. 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 which 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 2015–2020 (Ref. 198) are listed in Table 4-17:.

For the fisheries with fishing effort recorded within the OA or Sound EMBA (i.e. EMBAs associated with planned activities), additional information has been provided below.

Table 4-17: Presence of recent (2015-2020) fishing effort recorded within Commonwealth-managed commercial fisheries

Fishery	OA	Sound EMBA	Hydrocarbon Social Ecological	Hydrocarbon Ecological EMBA
North-West Slope Trawl Fishery	✓	✓	✓	✓
Western Deepwater Trawl Fishery			✓	✓

Relative fishing intensity data is not available for the North West Slope Trawl fishery due to low vessel numbers and confidentiality. Fishing activity during 2015-2020 is shown in Figure 4-18.

The North West Slope Trawl Fishery use bottom (or demersal) trawl methods to target deep-water prawn and scampi typically in depths of 350–600 m. The primary species landed in the North West Slope Trawl Fishery is the Australian scampi (*Metanephrops australiensis*), with smaller quantities of velvet scampi *(M. velutinus)* and Boschma's scampi (*M. boschmai*). A quantity of prawns is also harvested each season, and squids are becoming an increasingly significant

[18] 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.

component of the catch. Mixed snappers (*Lutjanidae*) and redspot emperor (*Lethrinus lentjan*) have historically been an important component of the North West Slope Trawl Fishery catch. Fishing for scampi occurs over soft, muddy sediments or sandy habitats, using demersal trawl gear on the continental slope. Fishing efforts decreased from 306 days, 5,903 trawl-hours and seven fishing permits in the 2019–20 fishing season to 233 days, 4,420 trawl-hours and six fishing permits in 2020–21 season. Four vessels operated in the 2020–21 season. Scampi stock are classified as not overfished and not subject to overfishing.

Southern Bluefin Tuna are listed as conservation dependent under the EPBC Act (Table 4-10)—a category that allows some commercial catch. 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. 337; Ref. 340). The indicative spawning ground for the Southern Bluefin Tuna (based on geospatial data provided by ABARES, and as shown in annual Commonwealth fishery status reports) extends into the OA and EMBA. Two peaks have been observed in Southern Bluefin Tuna spawning activity: September–October and February–March (Ref. 338; Ref. 339). 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. 338). Individual fish probably stay in the spawning area for one month or so (Ref. 338; Ref. 341). 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. 338). One to two-year old juveniles then head east to the Great Australian Bight, or west to the waters off South Africa (Ref. 338).

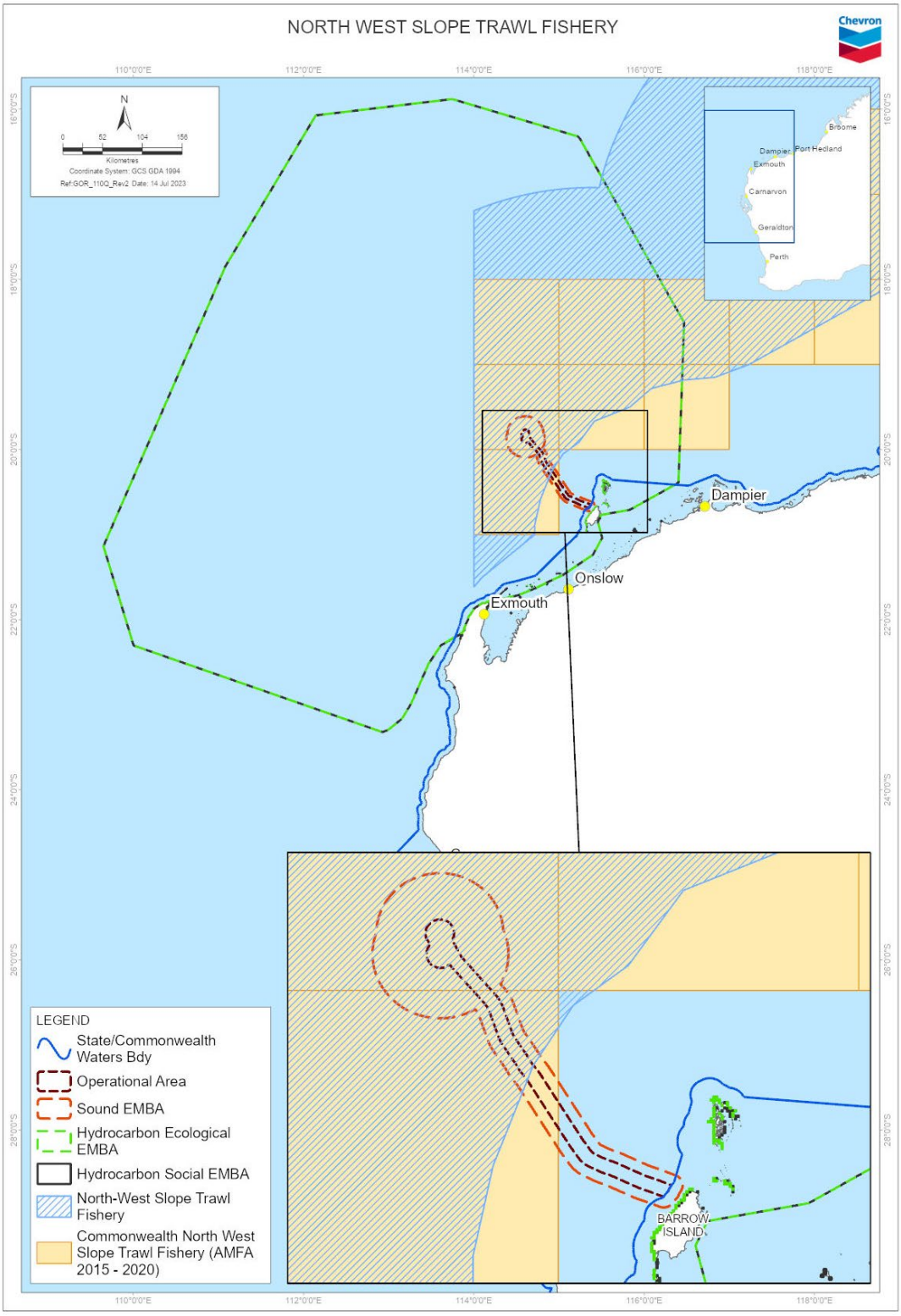


Figure 4-18: North West Slope Trawl Fishery—fishery management area, and records of fishing activity (based on 60 nm graticular reporting blocks) for 2015–2020, within the vicinity of the EMBA

4.4.1.2 State-managed fisheries

The State-managed commercial fisheries with fishery management areas that intersect the EMBA, and that have fishing effort recorded over a 10-year period (2012–2021) (Ref. 55) are listed in Table 4-18.

For the fisheries with fishing effort recorded within the OA or Sound EMBA (i.e. EMBAs associated with planned activities), additional information has been provided below.

Table 4-18: Presence of fishing effort recorded during 2012-2021 within State-managed commercial fisheries

Fishery	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
North Coast Bioregion				
Mackerel Managed Fishery	✓	✓	✓	✓
Onslow Prawn Managed Fishery			✓	✓
Pilbara Crab Managed Fishery	✓	✓	✓	✓
Pilbara Fish Trawl (Interim) Managed Fishery			✓	✓
Pilbara Line Fishery	✓	✓	✓	✓
Pilbara Trap Managed Fishery	✓	✓	✓	✓
West Australian Sea Cucumber (Beche-De-Mer) Fishery	✓	✓	✓	✓
Gascoyne Bioregion				
Exmouth Gulf Prawn Managed Fishery			✓	✓
Gascoyne Demersal Scalefish Fishery			✓	✓
West Coast Deep Sea Crustacean Fishery			✓	✓
Statewide				
Marine Aquarium Fish Managed Fishery			✓	✓
Specimen Shell Managed Fishery			✓	✓
Hermit Crab Fishery			✓	✓
Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions			✓	✓

Five fisheries were identified with activity within the vicinity of the OA; these are shown in Figure 4-19 to Figure 4-23. None of the identified fisheries within the OA or Sound EMBA operated more than three vessels per year.

The Mackerel Managed Fishery utilises near-surface trolling or jig fishing methods, with vessels primarily active during May to November (Ref. 199), and with the bulk of the catch typically taken north of the OA within Kimberley waters (Ref. 199). The fishery targets are Spanish mackerel (*Scomberomorus commerson*), Grey mackerel (*S. semifasciatus*) and other species from the genus *Scomberomorus.* The Mackerel Managed Fishery extends from the West Coast Bioregion to the WA/NT border. There are three managed fishing areas and during the 2020 season only 16 boats operated in these areas. The Pilbara catch

is often below the tolerance range, and the Gascoyne Coast / West Coast Bioregions catch have been below the tolerance range for almost all years since 2006 (Ref. 199). The total catch for the fishery in 2020/2021 was 246–430 t. The intersect between the OA and fishing effort for the Mackerel Managed Fishery occurs in the part of the OA associated with the installation of the HVSC (Figure 4-19).

The Pilbara Crab Managed Fishery utilises hourglass trap fishing methods, and primarily operated within inshore waters around Nickol Bay. This fishery primarily targets blue swimmer crab (*Portunus armatus*) and mud crabs (*Scylla spp.*). The 2020 fishing season reported a commercial catch of 0.6 t (Blue Swimmer Crab) (Ref. 199). The intersect between the OA and fishing effort for the Pilbara Crab Managed Fishery occurs in the part of the OA associated with the installation of the HVSC (Figure 4-20). During the ten-year period, active fishing effort was only recorded once (2016) within the 60 nm graticular block that intersects with the OA and Sound EMBA. The areas west of 115°06.50'E within the fishery management area are currently closed to fishing (this closed area includes the offshore extent of the OA and Sound EMBA).

The Pilbara Fish Trawl (Interim) Managed Fishery, Pilbara Line Fishery, and Pilbara Trap Managed Fishery are part of the Pilbara Demersal Scalefish Fishery. For the 2021 fishing year, the bulk of the catch within the Pilbara Demersal Scalefish Fishery was landed by the trawl sector (which does not occur within the OA); with smaller contributions from the trap (20%) and line (6%) sectors (Ref. 199).

The Pilbara Line Fishery (line fishing methods) operates on an exemption basis which restricts vessels to operating within a nominated 5-month block period each year (typically May-September). The Pilbara Line Fishery catch is made up around 45-50 different fish species. The main species targeted by the fishery are bluespotted emperor (*Lethrinus punctulatus*), red emperor (*Lutjanus sebae*) and rankin cod (*Epinephelus multinotatus*), as well as some deeper offshore species such as ruby snapper and eightbar grouper. The total catch forthe fishery in 2020/2021 was 167 t (Ref. 199).

The Pilbara Trap Managed Fishery (trap methods) is managed through area closures and effort allocations (Ref. 199). The main species targeted by the Pilbara Trap Managed Fishery are bluespotted emperor (*Lethrinus punctulatus*), red emperor (*Lutjanus sebae*) and rankin cod (*Epinephelus multinotatus*). The total catch for the fishery in 2020/2021 was 584 t (Ref. 199).

The West Australian Sea Cucumber (Beche-De-Mer) Fishery collects sea cucumbers (also known and bêche-de-mer or trepang). The fishery is primarily based in the northern half of WA, from Exmouth Gulf to the Northern Territory border, however fishers do have access to all WA waters. It is a hand-harvest fishery, with animals caught principally by diving, and a smaller amount by wading. Given the OA occurs in water depths of ~25–1,350 m, and is >5 km from the coast, the use of this area by this fishery is expected to be limited. This is supported by the records for fishing effort, which show that within the ten-year period (2012–2021), only four months (January 2019, December 2018, November 2017, April 2014) recorded any presence within the 10 nm graticular reporting blocks that intersect with the OA. The intersect between the OA and fishing effort for the West Australian Sea Cucumber (Beche-De-Mer) Fishery occurs in the part of the OA associated with the nearshore installation of the HVSC (Figure 4-23).

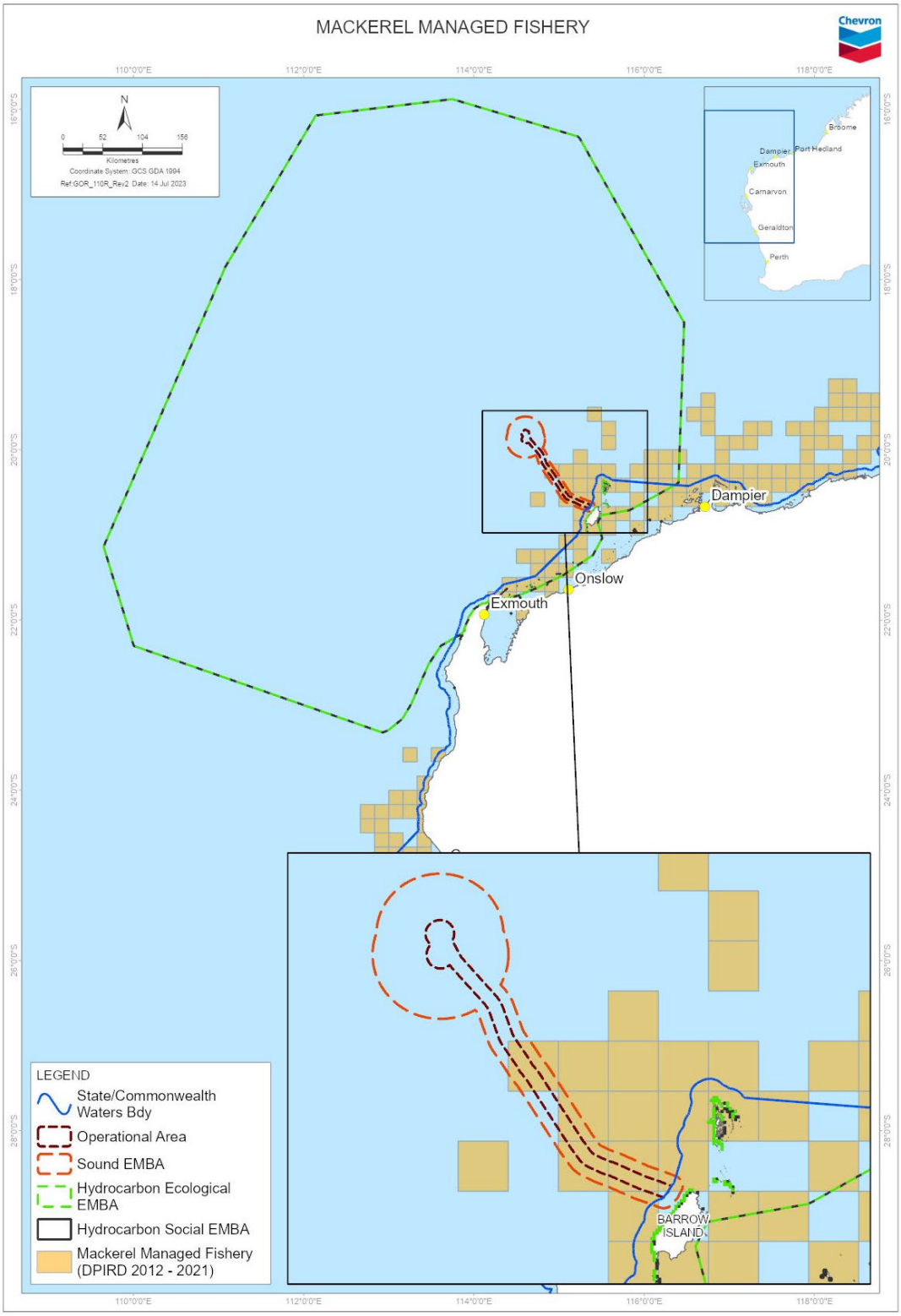


Figure 4-19: Mackerel Managed Fishery—recorded fishing effort (based on 10 nm graticular reporting blocks) for 2012–2021, within the vicinity of the EMBA

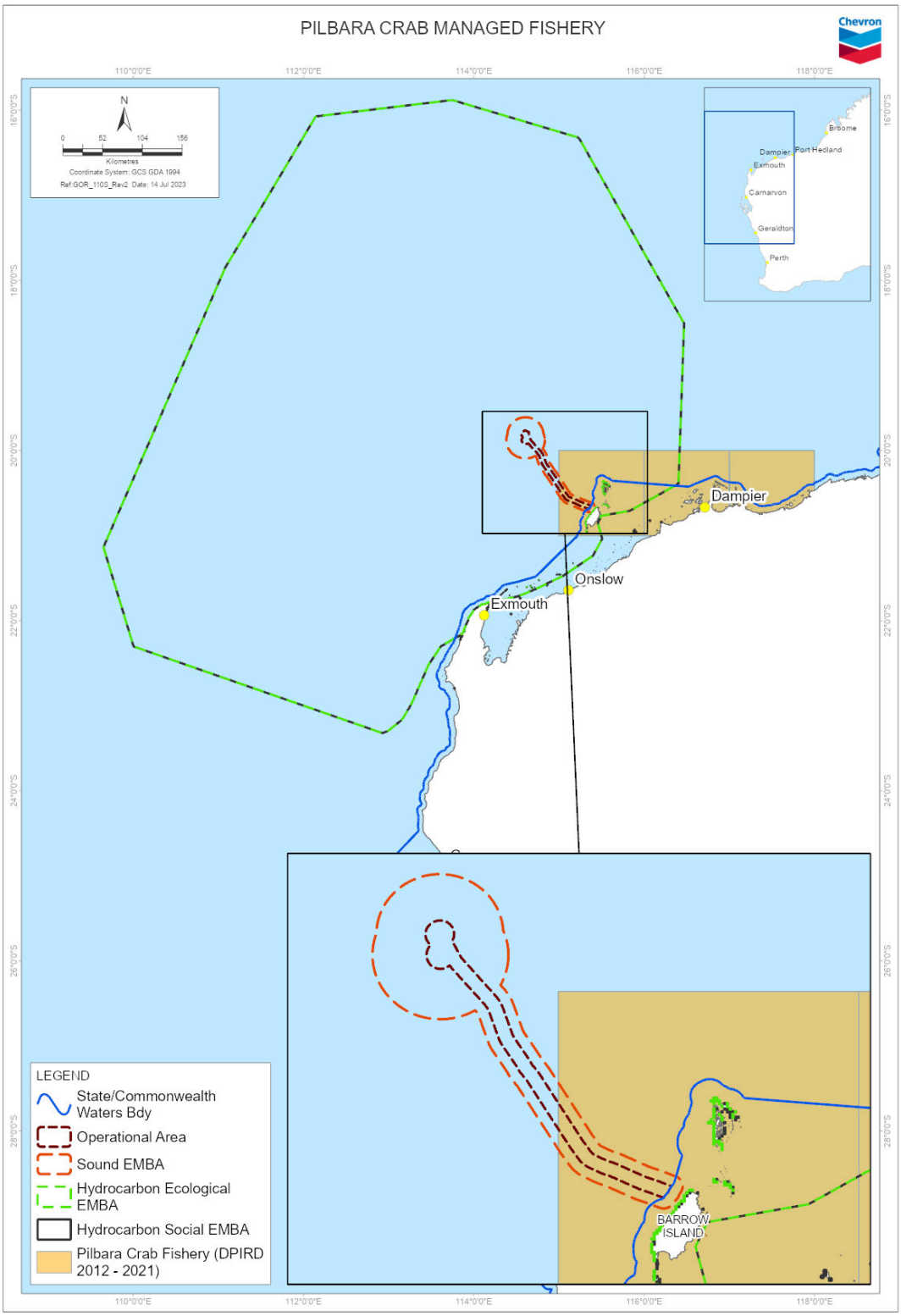


Figure 4-20: Pilbara Crab Managed Fishery—recorded fishing effort (based on 60 nm graiticular reporting blocks) for 2012–2021, within the vicinity of the EMBA

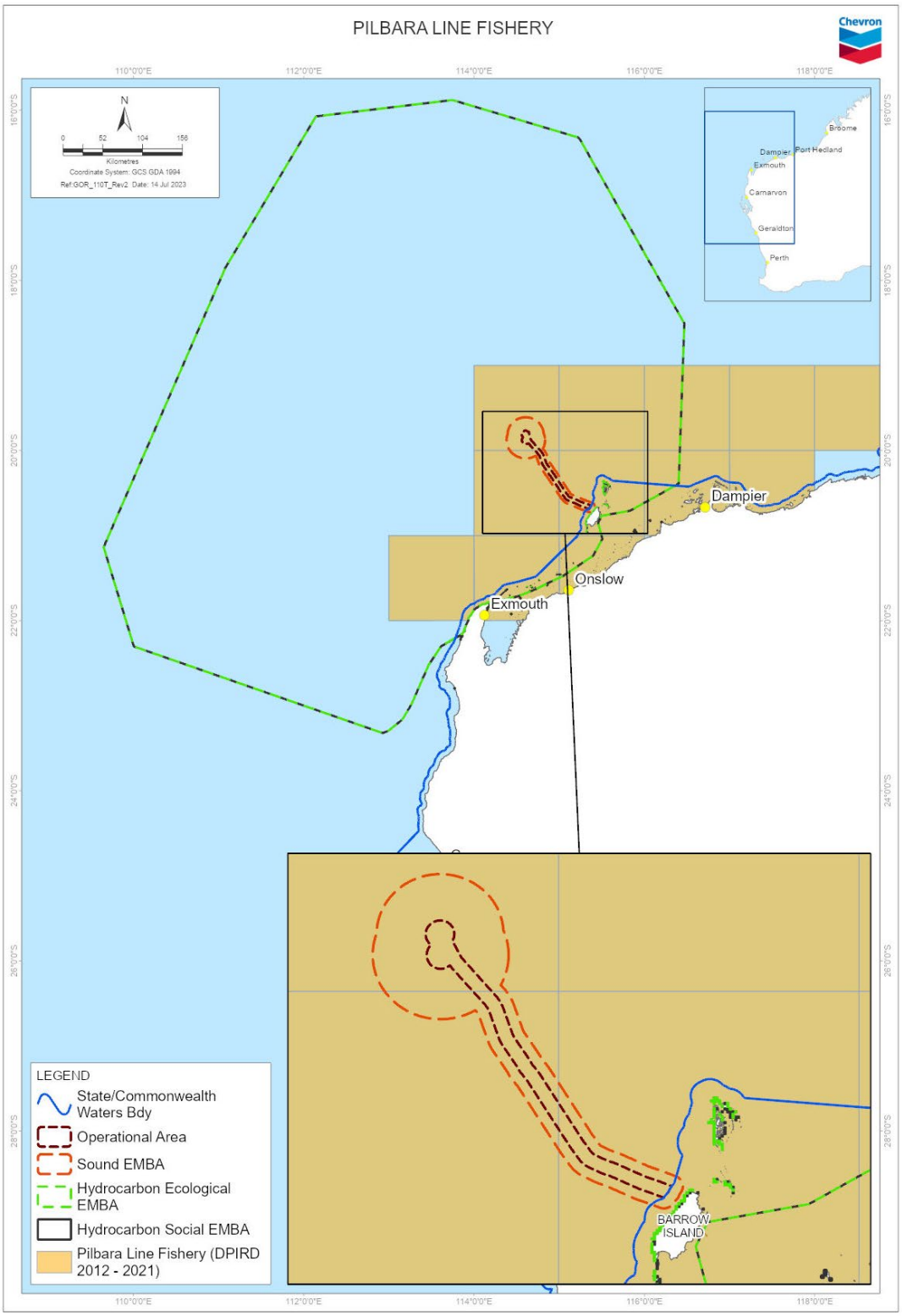


Figure 4-21: Pilbara Line Fishery—recorded fishing effort (based on 60 nm graiticular reporting blocks) for 2012–2021, within the vicinity of the EMBA

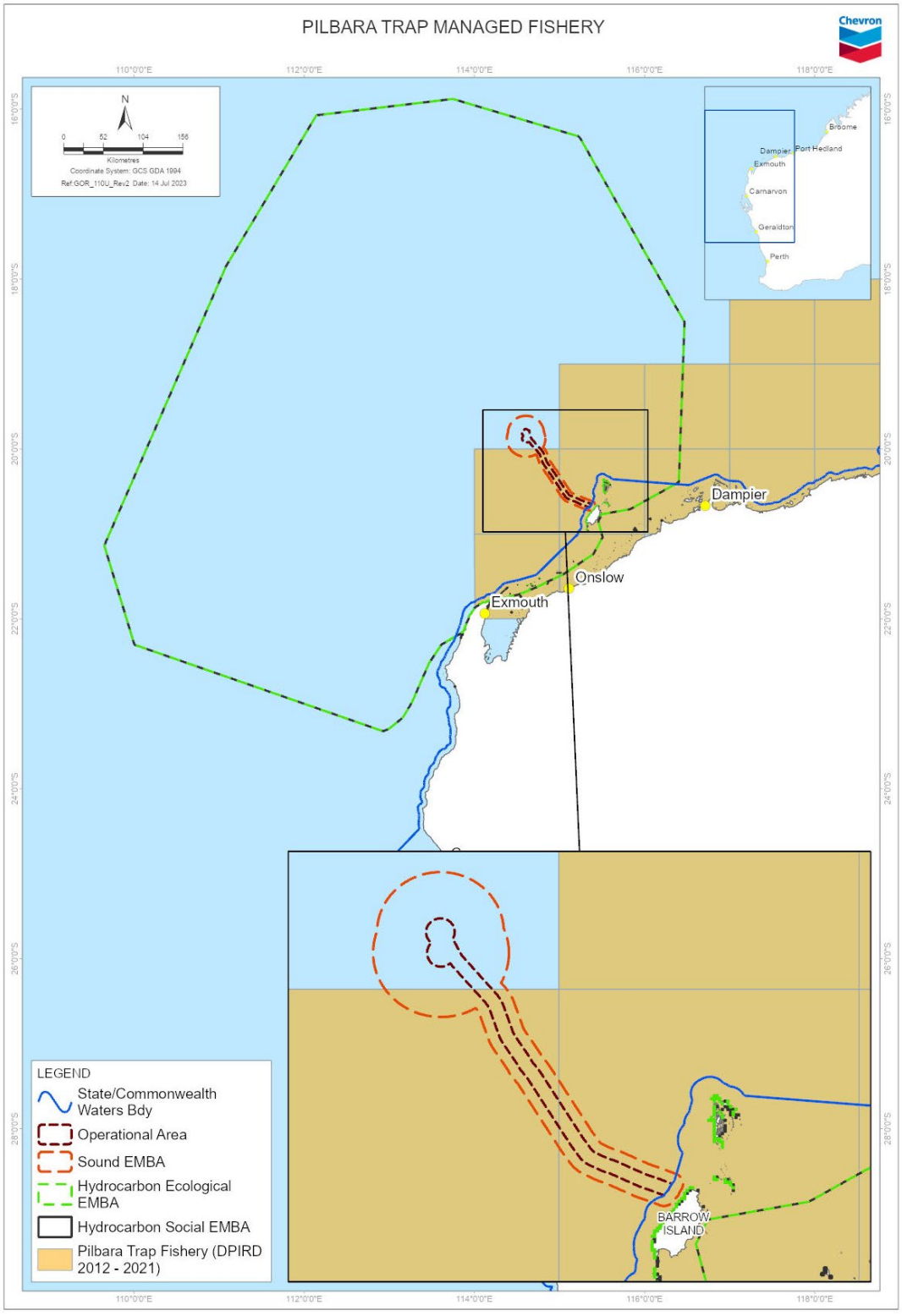


Figure 4-22: Pilbara Trap Managed Fishery—recorded fishing effort (based on 60 nm graiticular reporting blocks) for 2012–2021, within the vicinity of the EMBA

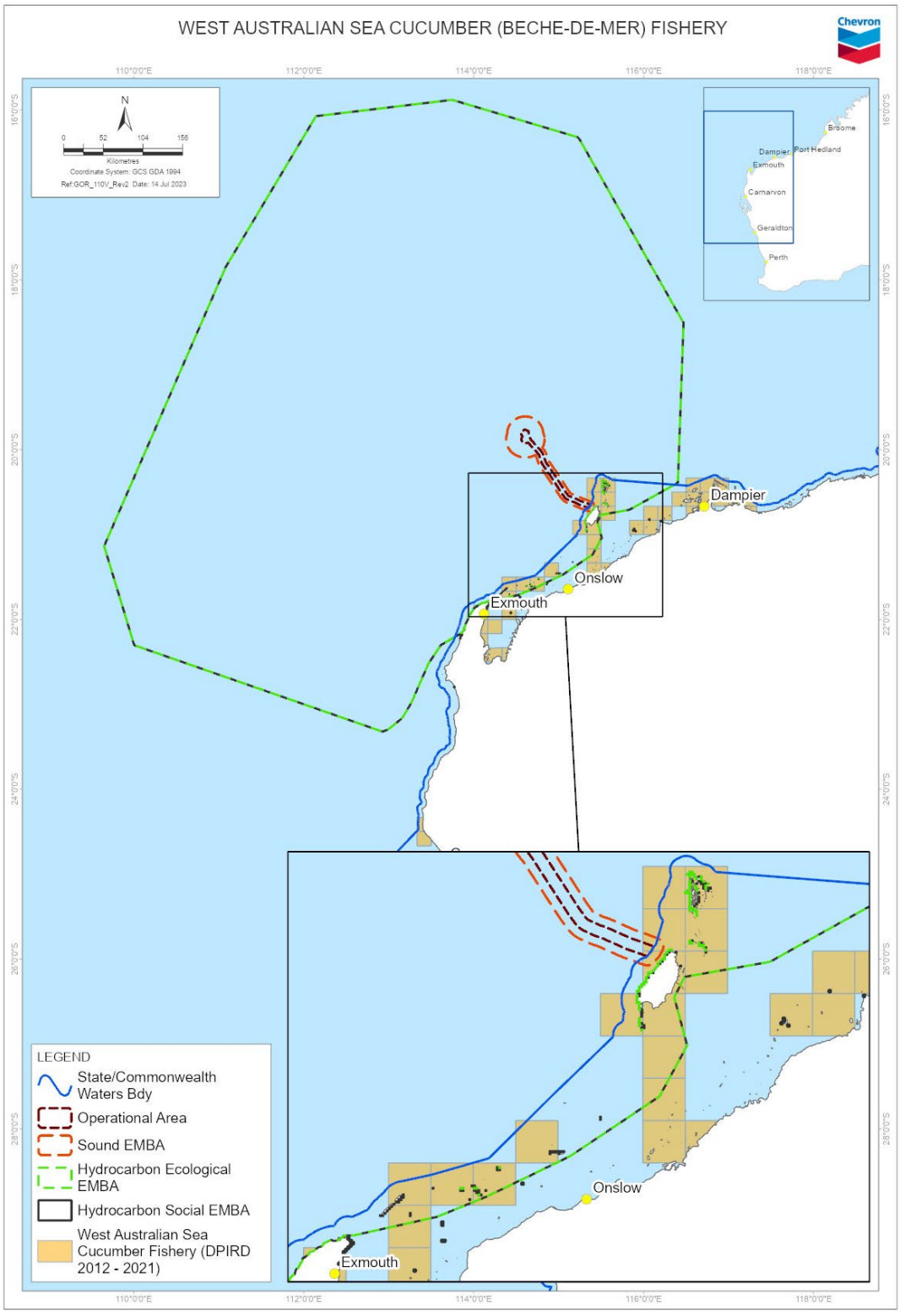


Figure 4-23: West Australian Sea Cucumber (Beche-De-Mer) Fishery—recorded fishing effort (based on 60 nm graiticular reporting blocks) for 2012–2021, within the vicinity of the EMBA

4.4.1.3 Pearling and aquaculture

Pearling and aquaculture operations in the northwest are typically restricted to inland and shallow coastal waters.

The OA occurs offshore and does not have any interface with the coast; and therefore there is no overlap with any known licensed aquaculture or pearling operations. The Sound EMBA does extend into nearshore waters on the west coast of Barrow Island; however there are no pearling or aquaculture facilities in these waters.

The Hydrocarbon EMBAs do interface with the coast, including around Barrow Island, the Montebello Islands, several Pilbara inshore islands, and scattered coastal areas along the North West Cape peninsula coast and Cape Preston (Figure 4-1). There are known pearl farm leases in nearshore waters around the Montebello Islands and one pearl approved site close to the North Muiron Island. There are also known aquaculture site northeast of Thevenard Island.

4.4.2 Recreation fisheries

Recreational fishing is one of the most popular activities in WA with an estimated third of the population fishing recreationally (Ref. 192). 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 2020–2021 survey report (Ref. 193) identified that most boat-based recreational fishing effort occurred in nearshore habitat (46% and 54% for North-Coast and Gascoyne Coast respectively), followed by inshore demersal habitats (32% and 39% for North Coast and Gascoyne Coast respectively). Most fishing effort was attributed to line fishing (87% and 91% for North-Coast and Gascoyne Coast respectively).

Tour Operator fishing efforts recorded over a 10-year period (2012–2021) (Ref. 55) identified there were up to seven vessels operating within the OA, however, fishing efforts have been reported between May and December only.

Some shore-based fishing may occur in the coastal regions within the Hydrocarbon EMBAs (Section 4.3.5.1).

4.4.3 Traditional fisheries

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 (Ref. 194). 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 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) Aboriginal people can undertake customary activities which includes hunting (except in marine sanctuary zones or marine nature reserves) for dugong, turtle, or crocodiles in WA.

As described in Section 4.3.5.2.1, ongoing use of marine and coastal resources, including customary fishing, is expected to occur in NWMR and adjacent coastal waters. However, it is expected that much of this activity will occur within shallow coastal waters and therefore would not intersect with the OA. Where shore-based fishing is undertaken, this may intersect with the Sound EMBA and Hydrocarbon EMBAs.

The EMBA does not intersect with the 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 a variety of sources, including satellite shipborne automated identification system (AIS) data, across Australia's Search and Rescue region. This data has been used to develop Figure 4-24, which shows recent vessel traffic within the vicinity of the EMBA.

The OA intersects a NWS shipping fairway (Figure 4-24). However, vessel traffic within the fairway is relatively low (compared to other NWS shipping fairways). Vessel traffic within and around the OA is most likely to comprises offshore support vessels for petroleum activities.

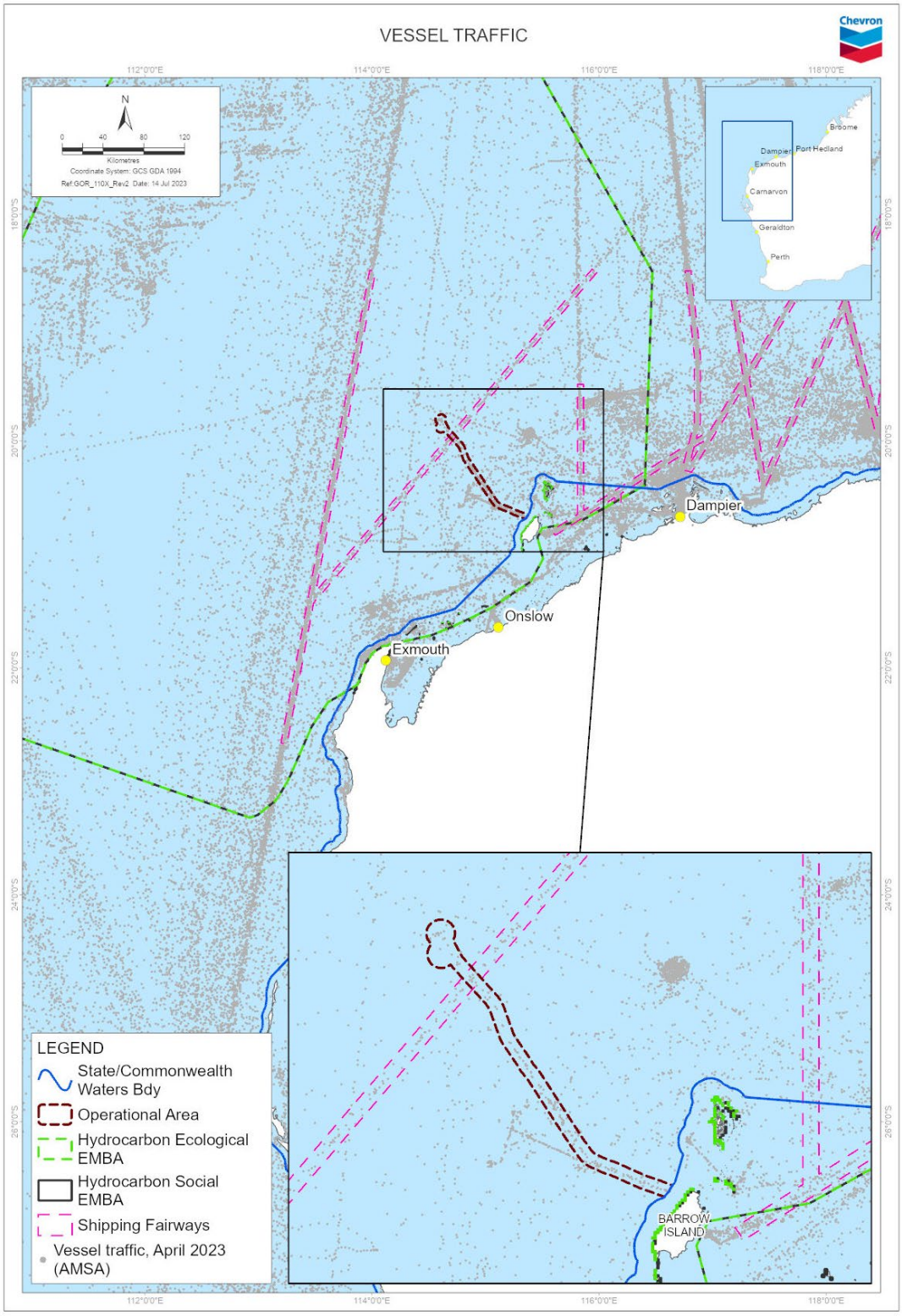


Figure 4-24: Vessel traffic within the vicinity of the EMBA

4.4.5 Tourism and recreation

Tourism is an important industry for WA, directly employing 56,300 people and indirectly employing a further 22,100 (Ref. 195). Charter fishing, diving, snorkelling, wildlife watching, and cruising are some of the commercial tourism activities in and adjacent to the NWMR (Ref. 88). With the exception of offshore fishing, most marine tourism and recreational activities occur in the shallower State waters (Ref. 88).

The OA and Sound EMBA occur offshore and do not have any interface with the coast. The Sound EMBA does extend into the nearshore areas of the west coast of Barrow Island. As such there is limited tourism and recreational activities expected within the OA and Sound EMBA.

The Hydrocarbon EMBAs do interface with the coast, including parts of Barrow Island, the Montebello Islands, other Pilbara inshore islands, as well as some parts of the mainland coast along the North West Cape Peninsula and Cape Preston (Figure 4-1). As described in Section 4.3.5.1, tourism and recreational activities may occur around the Montebello Islands, 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 (~130 km southwest of the OA; Section 4.6). Activities undertaken include recreational fishing, snorkelling and scuba diving, wildlife watching and encounters (including Whale Sharks, Manta Rays, Humpback Whales and turtles) (Ref. 196), 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. 197).

4.4.6 Other marine and coastal industries

Several other marine and coastal industries may be present within the EMBA (Table 4-19:). There were no offshore renewable energy facilities, salt mines, or onshore processing facilities identified within the EMBA.

Table 4-19: Presence of industries

Industry	OA	Sound EMBA	Hydrocarbon Social EMBA
Petroleum exploration and production	✓	✓	✓
Defence			✓
Submarine cables			✓
Ports			✓

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. 163). 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. 163).

Infrastructure from the Gorgon Gas Development is located within the OA, including existing manifolds, pipelines, flowlines and umbilicals. Except for standard subsurface operations, no other energy activities have been identified within the OA and Sound EMBA.

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. 248). The Australian Navy has three communication stations located on the North West Cape peninsula. The Harold E Holt Area A is located at the northern extent of the North West Cape, and includes a very low frequency radio, towers and associated infrastructure. Harold E Holt Area A also includes the Point Murat Navy Pier, and the waters extending 400 m around the pier (Ref. 261), There are no known sites of unexploded ordnance within the OA (Ref. 249).

Submarine telecommunications cables are underwater infrastructure linking Australia with other countries; the submarine communications cables carry the bulk of Australia's international voice and data traffic. There are no known submarine cables within the OA; the closest is the Darwin-Jakarta-Singapore Cable (DJSC) ~18 km to the north of the OA. This cable links the existing Australia Singapore Cable (ASC) to the North-West Cable System. Under Part 2 of the *Telecommunications Act 1997* (Cth), the Australian Communications and Media Authority 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 DJSC.

The *Port Authorities Act 1999* (WA) governs Western Australia's port authorities, covering their functions, responsibilities, concept of operations and related matters. The Port of Ashburton and Port of Varanus Island are both proclaimed ports managed under this Act, and the port areas extend within the Hydrocarbon EMBAs. 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, and occurs within the Hydrocarbon EMBAs.

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. 187).

The North-west Marine Parks Network Management Plan (Ref. 187) defines the following types of values for the Marine Parks in the North-west Network:

- natural values—habitats, species and ecological communities, and the processes that support their connectivity, productivity and function
- cultural values—living and cultural heritage recognising Indigenous beliefs, practices and obligations for Country, places of cultural significance and cultural heritage sites

- heritage values—non-Indigenous heritage that has aesthetic, historic, scientific or social significance
- socioeconomic values—the benefits for people, businesses and/or the economy.

The objectives of the North-west Marine Parks Network Management Plan (Ref. 67) 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 (a).

Australian Marine Parks (AMPs) occur within Commonwealth waters and have been proclaimed under the EPBC Act in 2007 and 2013. The presence of AMPs within the EMBA, and a summary of values, is described in Table 4-20:.

There is one AMP within the OA; the southern end of the OA partially overlaps the Montebello Marine Park.

Table 4-20: Presence of AMPs

Australian Marine Park^	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
Gascoyne (Multiple use zone [IUCN VI], National Park Zone [IUCN II], Habitat protection zone [IUCN IV])			✓	✓
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 species 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** Sea Country is valued for Indigenous cultural identity, health and wellbeing. Across Australia, Indigenous people have been sustainably using and managing their Sea Country for tens of thousands of years. The Baiyungu, Thalanyji and Yinikurtura People have responsibilities for Sea Country in the 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.				

Australian Marine Park^	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
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 Western Australian state water boundary, and is adjacent to the Western Australian 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** 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 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. The Marine Park was originally proclaimed under the National Parks and Wildlife Conservation Act 1975 on 20 May 1987 as the Ningaloo Marine Park (Commonwealth Waters), and proclaimed under the EPBC Act on 14 December 2013 and renamed Ningaloo Marine Park on 9 October 2017. **Natural values** 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				

Australian Marine Park^	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA

- 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. Biologically important areas 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

Sea Country is valued for Indigenous cultural identity, health and wellbeing. Across Australia, Indigenous people have been sustainably using and managing their Sea Country for tens of thousands of years. The Gnulli people have responsibilities for Sea Country in the Marine Park.

The Yamatji Marlpa Aboriginal Corporation is the Native Title Representative Body for the Yamatji region.

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 Murion 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. 67*

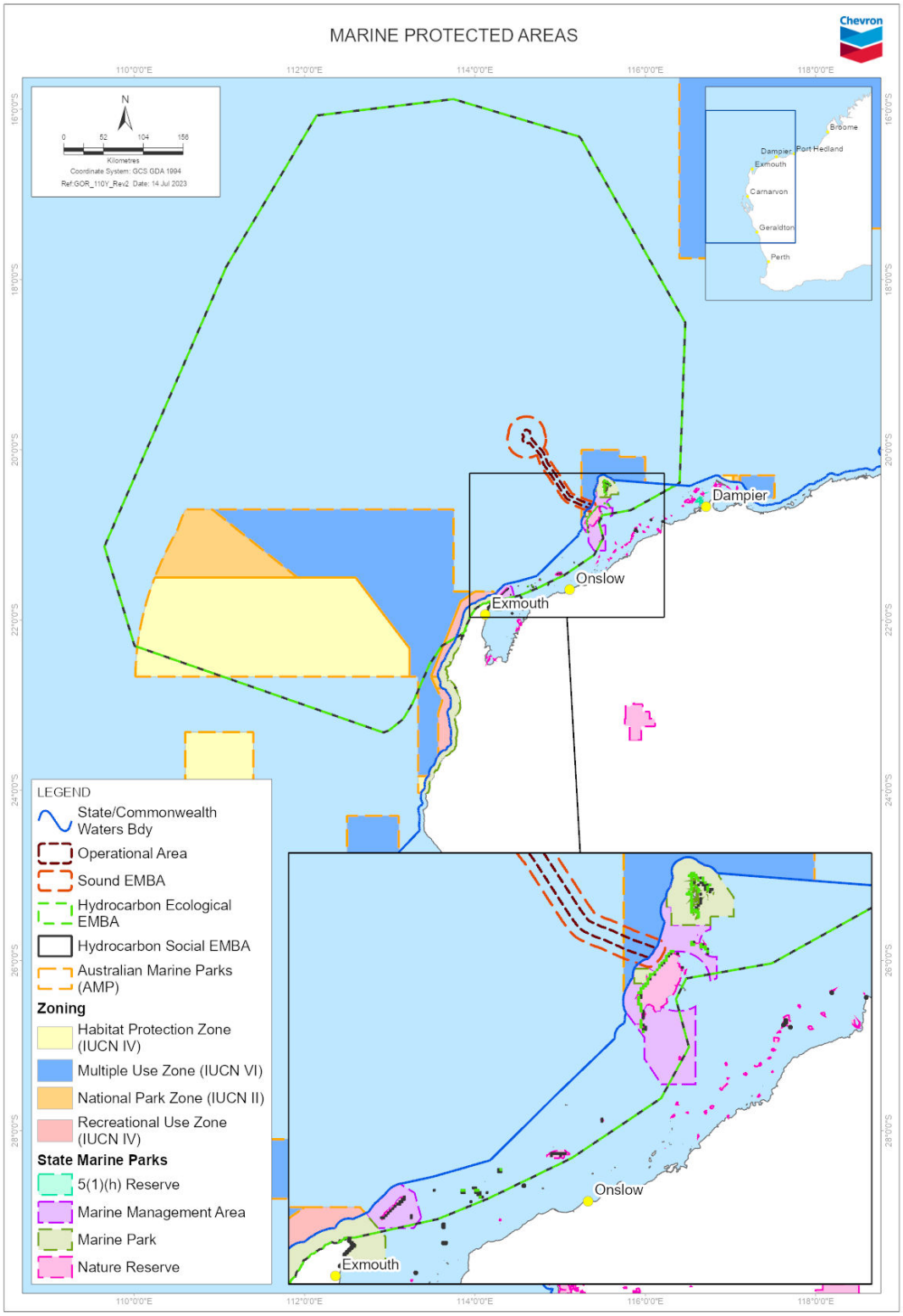


Figure 4-25: Commonwealth and State marine protected areas within the vicinity of the EMBA

4.5.2 State marine parks

State marine parks, and marine management areas are proclaimed under the *Conservation and Land Management Act 1984* (WA) (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; however, the southern extent of the OA is adjacent to the Barrow Island Marine Management Area (Figure 4-25). The presence of State marine parks, and marine management areas within the EMBA is shown in Table 4-21:.

Table 4-21: Presence of State marine protected areas

State marine protected areas	Zone Type (IUCN category)	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
Barrow Island Marine Park	Unassigned (IUCN Ia)		✓	✓	✓
Barrow Island Marine Management Area	Unassigned (IUCN VI)		✓	✓	✓
Montebello Islands Marine Park	Sanctuary Zone (IUCN IA)		✓	✓	✓
	General Use Zone (IUCN II)		✓	✓	✓
	Special Purpose Zone – Pearling (IUCN VI)			✓	✓
	Special Purpose Zone (Benthic Protection) (IUCN IV)			✓	✓
	Recreation Zone (IUCN II)			✓	✓
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)			✓	✓

4.5.3 State terrestrial protected areas

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

The OA occur offshore and does not have any interface with the coast. The Hydrocarbon EMBAs do interface with the coast, including parts of Barrow Island, the Montebello Islands, other Pilbara inshore islands, as well as some parts of the mainland coast along the North West Cape Peninsula and Cape Preston (Figure 4-1). The State terrestrial protected areas that intersect with the Hydrocarbon EMBAs are shown in Table 4-22:.

Table 4-22: Presence of State terrestrial protected areas

Terrestrial protected areas	Zone Type (IUCN category)	OA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
Barrow Island Nature Reserve *	Nature Reserve (IUCN Ia)		✓	✓
Boodie, Double Middle Islands*	Nature Reserve (IUCN Ia)		✓	✓
Bundegi Coastal Park^	5(1)(h) Reserve (IUCN II)			✓
Cape Range National Park^	National Park (IUCN II)			✓
Montebello Islands Conservation Park^	Conservation Park (IUCN II)		✓	✓
Pilbara Islands[19] Nature Reserves*^	Nature Reserve (IUCN Ia)		✓	✓

** Protected area is landward of LWM.*
^ Protected area is landward of HWM

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 4-23 identifies the presence of these, and other marine or coastal heritage protected places, within the EMBA.

Table 4-23: Presence of heritage values

Feature	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
World Heritage property				
Ningaloo Coast			✓	✓
National Heritage place				
Ningaloo Coast			✓	✓
Commonwealth Heritage place				
Ningaloo Coast			✓	✓
Indigenous Protected Areas				
N/A	*(none identified within the EMBA)*			
Sites or artefacts protected under the *Underwater Cultural Heritage Act 2018* (Cth)				
Historic shipwrecks (>75 years old)			✓	✓

[19] The Pilbara Inshore Islands management plan includes 20 existing nature reserves, with several small unallocated Crown Land islands proposed to become nature reserves. Of the existing nature reserves, The Hydrocarbon Ecological and Social EMBAs interact with Bessieres, Lowendal, Serrurier Islands. The Hydrocarbon Social EMBA also interacts with Muiron, Round, Airlie, and Victor Islands.

Feature	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
Shipwrecks			✓	✓
Sunken aircraft	*(none identified within the EMBA)*			
In situ artefacts	*(none identified within the EMBA)*			
Sites or artefacts protected under the *Aboriginal Heritage Act 1972* (WA) [20]				
28 Mile Creek North 1 (Artefacts/Scatter, Midden/Scatter)				✓
Bloodwood Creek Midden 1 (Artefacts/Scatter, Midden/Scatter)				✓
Bloodwood Creek Midden 2 (Artefacts/Scatter, Midden/Scatter)				✓
Bloodwood Creek Midden 3 (Artefacts/Scatter, Midden/Scatter)				✓
Bloodwood Creek Shoreline (Artefacts/Scatter, Midden/Scatter)				✓
Camp 17 North Middens (Artefacts/Scatter, Midden/Scatter)				✓
Camp 17 South Middens (Artefacts/Scatter, Midden/Scatter)				✓
Low Point Midden (Artefacts/Scatter, Midden/Scatter)				✓
Mandu Mandu Ck Rockshelters (Artefacts/Scatter)				✓
Mandu Mandu Creek North (Artefacts/Scatter, Midden/Scatter)				✓
Mandu Mandu Creek South (Artefacts/Scatter, Midden/Scatter)				✓
Mandu Mandu Rockshelters (Artefacts / Scatter, Midden / Scatter, Rockshelter, Arch Deposit, Other)				✓
Mangrove Bay. (Artefacts/Scatter, Midden/Scatter, Skeletal Material/Burial, Hunting Place)				✓
Mesa Camp (Artefacts/Scatter, Midden/Scatter)				✓
Montebello Island Haynes Cave (Artefacts / Scatter, Midden / Scatter, Rockshelter, Arch Deposit)			✓	✓
Montebello Island Noala Cave (Artefacts / Scatter, Midden / Scatter, Rockshelter, BP Dating: 27,220 +/- 640)			✓	✓
Oyster Stacks Midden (Artefacts/Scatter, Midden/Scatter				✓
Point Murat 01 (Artefacts/Scatter, Midden/Scatter)				✓
Point Murat 02 (Artefacts/Scatter, Midden/Scatter)				✓

[20] 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. 264) include a buffer around sites to protect privacy regarding the location. As such, the identified heritage sites may not be present within the EMBA.

Feature	OA	Sound EMBA	Hydrocarbon Ecological EMBA	Hydrocarbon Social EMBA
Point Murat 04 (Artefacts/Scatter)				✓
Point Murat (Artefacts/Scatter, Midden/Scatter, Skeletal Material/Burial, Camp, Other)				✓
Pilgramunna Bay Midden (Artefacts/Scatter, Midden/Scatter)				✓
Sandy Bay North (Artefacts/Scatter, Midden/Scatter)				✓
Site No. 25 (Engraving)				✓
Tulki Well Midden (Artefacts/Scatter, Midden/Scatter)				✓
Vlaming Head (Ceremonial, Mythological)				✓
Determined areas under the *Native Title Act 1993* (Cth)				
Native Title determination WCD2019/016				✓
Native Title determination WCD2018/006				✓
Claim areas under the *Native Title Act 1993* (Cth)				
N/A	(*none identified within the EMBA*)			

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. 188). 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. 189).

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. 188). Intertidal systems such as rocky shores, sandy beaches, estuaries, and mangroves are also present (Ref. 188). The most dominant marine habitat is Ningaloo Reef, which sustains both tropical and temperate marine fauna and flora, including marine reptiles and mammals (Ref. 188).

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. 188). 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. 188). 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. 188).

In addition to the natural values of the Ningaloo Coast, Indigenous values are identified under the National Heritage listing (Ref. 189). 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. 189).

4.6.2 Underwater cultural heritage

Australia's UCH is protected under the UCH Act; this legislation protects shipwrecks, sunken aircraft and other types of underwater heritage, including First Nations UCH in Australian waters[21].

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". The UCH Act protects physical sites and artefacts; intangible heritage values with no physical component are not protected under the Act (Ref. 292).

A desktop analysis was undertaken to determine the presence of UCH within the EMBA. This analysis included:

- searches of the online *Australasian Underwater Cultural Heritage Database* (Ref. 293) for known UCH
- consultation with First Nations people and/or representative bodies (relevant persons) to identify presence of UCH artefacts.

Based on the database searches, both historic (>75 years old) shipwrecks and other shipwreck sites were identified in the EMBA (Table 4-23). No sunken aircraft, or other types or artefacts, were identified within the EMBA from the database searches.

The consultation undertaken during the preparation of this EP is summarised in Section 6. During this consultation, no specific First Nations UCH has been identified within the 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).

4.6.3.1 Native Title determination (WCD2019/016)

A Native Title determination (WCD2019/016) extends over the Ningaloo Coast area. The Yinggarda, Baiyungu, and Thalanyji people received recognition as a Native Title holder over an area of 71,354 m^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. 190). 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. 190). The determination area contains places of special significance, such as cultural, spiritual and ceremonial sites and natural resources (Ref. 190).

The relevant Prescribed Bodies Corporates (PBCs) are the Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) (representing the Baiyungu and Thalanyji people) and the Yinggarda Aboriginal Corporation (YAC).

[21] The UCH Act applies to all Australian waters, including both State waters (coastal waters) and Commonwealth waters (extending from coastal waters to the edge of continental shelf).

4.6.3.2 Native Title determination (WCD2018/006)

The Native Title determination (WCD2018/006) extends over the Mardie coast area. The Yaburara and Mardudhunera people received recognition as a Native Title holder over an area of 5,683 km^2. The determination area encompasses several pastoral leases, mining tenements, roads, reserves and unallocated Crown land.

The Yaburara and Mardudhunera people have maintained a physical presence in their respective part of the determination area and have a continuing physical or spiritual involvement in that area (Ref. 191). The determination area contains places of special significance, such as cultural, spiritual, and ceremonial sites and natural resources.

The relevant PBC is the Wirrawandi Aboriginal Corporation (WAC).

5 environmental 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 activity (as described in Section 3) and any potential emergency conditions associated with the petroleum activity. 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 CAPL's *ABU OE Risk Management Process* (Ref. 14) 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. 15) and HB 203:2012 *Managing Environment-Related Risk* (Ref. 16).

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 previous GFP and GS2 installation
- 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 are described and evaluated during the impact and risk assessment. The petroleum activity is described in detail in Section 3.

5.2 Identification of relevant 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, relevant values and sensitivities include the following:

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

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

Environmental values and sensitivities are also considered to be associated with each of the receptor groups identified and described in Section 4 (i.e. in addition to those relevant values and sensitivities as identified under the OPGGS(E)R). All

environmental values and sensitivities have been taken into consideration during the consultation process (and the identification of associated functions, interests, or activities; Section 6), and the impact and risk assessment (Section 7).

5.3 Identification of relevant environmental 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 discharges, greenhouse gas emissions, 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 are 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 disturbance
- air emissions
- light emissions
- underwater sound emissions
- electromagnetic emissions
- invasive marine pests
- 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 Chevron's 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 the 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 environmental impact	Localised, short-term environmental impact	Localised, long-term environmental impact	Short-term, widespread environmental impact	Long-term widespread environmental impact	Persistent landscape-scale environmental 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.

The OPGGS(E)R defines a control measure as "a system, an item of equipment, a person or a procedure, that is used as a basis for managing environmental impacts and risk".

5.5.2.1 ALARP decision context

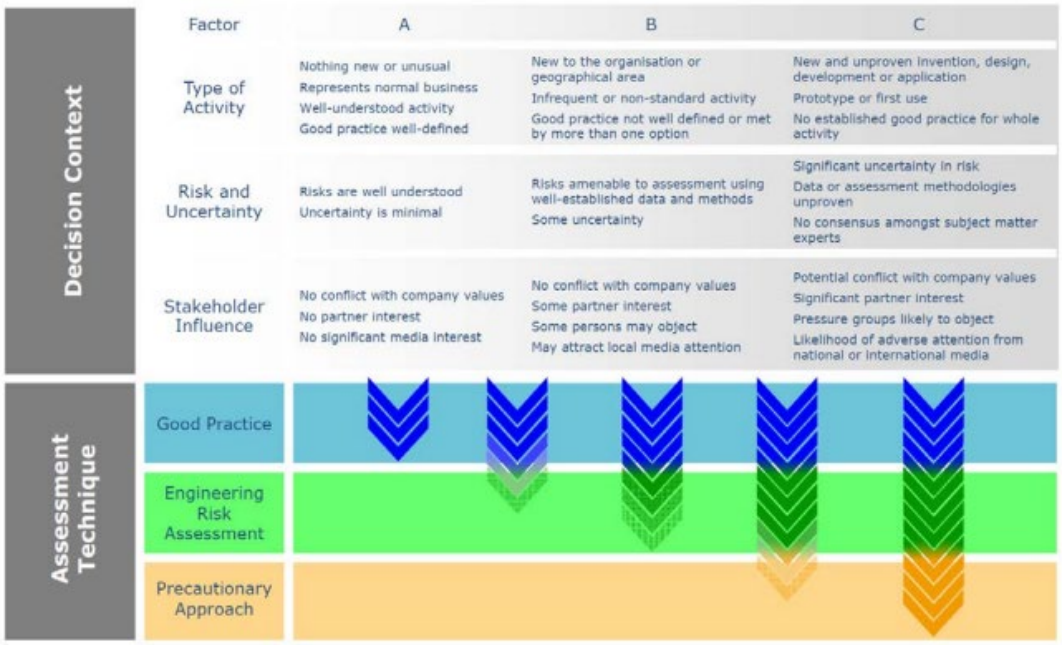
In alignment with NOPSEMA's ALARP guidance note (Ref. 17), CAPL has adapted the approach developed by Oil and Gas UK (OGUK; now Offshore Energies UK [OEUK]) (Ref. 18) for use in an environmental context to determine the assessment technique required to demonstrate that impacts and risks are ALARP. Specifically, 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 conservation advices), 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. 17)

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 Section 6. The assessment techniques considered include:

- good practice
- engineering risk assessment
- precautionary approach.

5.5.2.2 Good practice

OEUK (Ref. 18) 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 OEUK (Ref. 18), 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, OEUK (Ref. 18) 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 (as defined under the OPGGS(E)R).

5.6 Impact and risk acceptance criteria

NOPSEMA provides guidance on demonstrating that impacts and risks will be of an acceptable level (Ref. 19). 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 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. 17), 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. 19), 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/C

CAPL will consider 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 petroleum 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

Criteria	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.

Criteria	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 management of 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 guideline (Ref. 19), 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.

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 8.3.4.1.

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."*[22]

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. 20). 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 (Ref. 21 at paragraphs 55–57).

[22] Paragraph 89 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21). 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.

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. 20).

6.2 Consultation design

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. 22) and further guided by:

- NOPSEMA's *Environment plan decision making guideline* (Ref. 19)
- NOPSEMA's *Environment plan content requirements guidance note* (Ref. 23)
- NOPSEMA's *Consultation in the course of preparing an environment plan guideline* (Ref. 20)
- NOPSEMA's *Consultation with Commonwealth agencies with responsibilities in the marine area guideline* (Ref. 24)
- NOPSEMA's *Petroleum activities and Australian Marine Parks guidance note* (Ref. 25)
- Full Court of the Federal Court of Australia's decision in *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21)
- 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. 26)
- Government of Western Australia's *Aboriginal Cultural Heritage Act 2021—Consultation Guidelines* (Ref. 27)
- WA Department of Energy, Mines, Industry Regulation and Safety (DEMIRS*) Guideline for the Development of Petroleum, Geothermal and Pipeline Environment Plans in Western Australia* (Ref. 28)
- Australian Fisheries Management Authority's (AFMA) Petroleum industry consultation with the commercial fishing industry (Ref. 29)
- Western Australian Fishing Industry Council's (WAFIC) *Oil & Gas Consultation Approach for Unplanned Events* (Ref. 30)
- WAFIC's *Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector* (Ref. 357)
- DPIRDs *Guidance statement for oil and gas industry consultation with the Department of Fisheries* (Ref. 31)
- WA Department of Transport's (DoT) *Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements* (Ref. 32).

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.

6.2.1 Relevant person

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

- regulation 25(1)(a)—each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the EP may be relevant
- regulation 25(1)(b)— if the EP relates to activities in the offshore area of a State—the Department of the responsible State Minister
- regulation 25(1)(c)— if the EP 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 EP
- 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. 21), and subsequent NOPSEMA guidance (Ref. 20), it is clear that the phrase "functions, interests or activities" stated in regulation 25(1)(d) should be broadly construed[23]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[24]
- **interests**—in accordance with the accepted concept of "interest" in other areas of public administrative law, and including "any interest possessed by an individual whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation"[25]
- **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[26].

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 screen in relevant persons.

Where interests are held communally, CAPL has made a decisional choice to consult with representative bodies (Ref. 21 at paragraphs 96–102) and has sought to do so through meetings (Ref. 21 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. 21 at paragraph 47) and CAPL has also sought to identify those representative body organisations themselves as relevant persons (Ref. 21 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

[23] Paragraph 51 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21).

[24] Paragraph 60 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21).

[25] Paragraphs 63 and 65 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21).

[26] Paragraphs 58 and 59 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21). 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.

persons for the purposes of consultation to endeavour to make all necessary efforts to identify relevant persons.

6.2.2 Sufficient information

Under regulation 25(2) of the OPGGS(E)R and NOPSEMA's guidelines (Ref. 19; Ref. 20), 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 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 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:

- CAPL issued an initial factsheet to identified relevant persons in October 2022; this factsheet included information about the proposed petroleum activity, potential impacts and risks, control measures, and included maps showing EMBA
- CAPL released information regarding the proposed J-IC installation and pre-commissioning activities to the Online Consultation Hub (https://australia.chevron.com/our-businesses/upcoming-activities) on 3 February 2023 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 3 February 2023; in the Pilbara News, Mid-West Times, and Northwest Telegraph on 8 February 2023, in Business News on 13 February 2023, and National Indigenous Times on 21 February 2023
- CAPL published a LinkedIn post on 24 February 2023 with a link to the Online Consultation Hub that has information regarding the J-IC installation and pre-commissioning activities
- CAPL developed posters, presentation materials, and handouts for use and distribution in face-to-face meetings
- CAPL attended various face-to-face meetings with relevant persons (see appendix d)
- CAPL held an information session in the town of Onslow outlining its planned activities, including the J-IC installation and pre-commissioning activities, on 14 March 2023.

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 6.2.3), 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, and other relevant persons • 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

Category of persons or organisations	Consultation strategy and information provided
	– 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 EMBA; any input 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 6.2.3), 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.
ENGOs Government departments or agencies Other petroleum titleholders / commercial industries Tourism and recreation operators WA World Heritage advisory committees Self-identified and other relevant persons	• 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 6.2.2), 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 6.2.3), CAPL will determine whether further consultation is required • ongoing consultation with follow up correspondence, phone calls and meetings as required.

6.2.3 Reasonable period

Under regulation 25(3) of the OPGGS(E)R and NOPSEMA's guidelines (Ref. 19; Ref. 20), 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. 21), 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. 19) or up to eight weeks (Ref. 25).

Available guidance regarding consultation with State departments or agencies indicates a reasonable period for standard activities is no less than 20 business days (Ref. 31), and up to six weeks (Ref. 32).

Guidance taken from the *Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector* (Ref. 357) suggests that reasonable period for

effective consultation is between 30 to 60 days, with 30 days considered the minimum.

Guidance taken from the *Aboriginal Cultural Heritage Act 2021—Consultation Guidelines* (Ref. 27) 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).

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.

6.2.4 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 "[a]ll 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.

6.2.5 Identification of relevant persons

In accordance with NOPSEMA's guideline for consultation (Ref. 20), titleholders must identify who is a relevant person and the rationale used to determine that identification as a relevant person.

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 EMBA
  - any intersection between the 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 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. 24; Ref. 25; Ref. 29; Ref. 30; Ref. 31; Ref. 32)
  - CAPL's previous consultation history for activities on the NWS
  - advice from representative industry and/or community bodies
  - online searches
  - review of publicly available databases or registers (e.g. access and use authorisations within AMPs, DPIRD's register of fishery licence holders).

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.

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 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 • installation—permanent presence of the SCSt, SCSM, HVSC, MV umbilicals, and other associated subsea infrastructure, and subsea stabilisation (e.g. rock berms, concrete mattresses) within the OA • installation—permanent presence of FCS (at the surface) and the associated subsea mooring system within the OA • field support—temporary (short or long-term) presence of vessels within the OA during installation and pre-commissioning, or IMR activities.	Commercial shipping	Interest and activity – Commercial shipping	Presence of vessels or FCS has the potential to result in disruption to other marine users	Commercial vessel traffic density within the OA is relatively low, including within the part of the OA that intersects a NWS shipping fairway. Therefore, the presence of vessels or the FCS within the OA are not expected to have significant consequences for the functions, interests or activities of commercial shipping. Notwithstanding, there may be an intersection with commercial shipping activities and 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 Presence of vessels or FCS has the potential to result in disruption to other marine users	Subsea infrastructure has been in place within the OA since 2012, 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. Fishing effort records obtained from DPIRD (Ref. 55) for the five State-managed commercial fisheries indicated that fishing effort within the OA varies each year, but is typically low with <3 vessels recorded as present within the graticular reporting blocks that intersect the OA (Ref. 55). Similarly, fishing activity within the	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
				OA associated with the Commonwealth- managed fishery is also low.	
	Other commercial industries	Interest and activity – petroleum exploration / production	Concurrent petroleum activities have the potential to result in disruption to other marine users	The OA intersects petroleum titles held by other petroleum titleholders 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 or long-term) presence of vessels within the OA during installation and pre-commissioning, or IMR activities.	Marine fauna Cultural values	Interest and activity – Environmental conservation Cultural connections	Unplanned interactions with marine fauna Changes to cultural heritage values	Several BIAs or habitat critical to the survival of a species also overlap with the OA, including: • Humpback Whale (migration BIA) • Pygmy Blue Whale (migration BIA) • Flatback Turtle, Green Turtle, Hawksbill Turtle (internesting buffer BIA, and internesting habitat critical to the survival of a species) • Whale Shark (foraging BIA). As vessels will be slow-moving whilst implementing the activities within the scope of this EP, incidences of fauna strike are not expected. If a fauna strike occurred and resulted in death, it is not expected to have a detrimental effect on the overall population of protected species; this event would result in a limited environmental impact. However, it	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
				is acknowledged that relevant persons may hold interests relating to the protection of marine fauna.	
Seabed disturbance – • installation—presence of the subsea infrastructure and subsea stabilisation (e.g. rock berms, concrete mattresses) within the OA, and the contingency temporary storage of mooring lines, or the HVSC • IMR—as required by maintenance activities (e.g. span rectification) • field support—contingency anchoring by vessels, wet parking of ROVs within the OA.	Marine environmental quality Benthic habitat and communities Cultural values	Interest and activity – Environmental conservation Cultural connections	Localised and temporary reduction in water quality Alteration of benthic communities and habitats Changes to cultural heritage values	The petroleum activity is expected to result in disturbance when sediment on the seabed is disturbed and becomes suspended in the water column when infrastructure or equipment is placed on the seabed, or during trenching. 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 artefacts 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 – • installation—combustion of diesel from the temporary generators (i.e. used until power supply via HVSC is available) on board the FCS	Marine environmental quality	Interest and activity – Environmental conservation	A localised and temporary reduction in air quality Contribution to the reduction of the global atmospheric carbon budget	As reduction in air quality will be temporary and highly localised, and due to the overall *de minimis* contribution to the reduction of the global carbon budget from direct GHG emissions associated with the activities under this EP, it is not expected that the functions,	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
• field support—combustion of marine fuel from vessels, or aviation fuel from helicopters, within the OA during installation and pre-commissioning, or IMR activities.				interests or activities of relevant persons will be affected. However it is acknowledged that relevant persons may hold interests relevant to this aspect.	
Light emissions – • installation— navigation and operational lighting from the of FCS • field support—navigation and operational lighting from vessels during the petroleum activity (including installation and pre-commissioning, or IMR activities) within the OA.	Marine environmental quality Marine fauna	Interest and activity – Environmental conservation	A localised and temporary change in ambient light Change in fauna behaviour for light-sensitive species	CAPL expects that its activities could result in temporary changes to ambient light conditions. However it is expected that although light may be visible, it will not be at a level that is biologically relevant or that will result in behavioural impacts at distances >1.8 km from a vessel. Several BIAs and/or habitat critical to the survival of a species also overlap with the OA, including: • Fairy Tern, Lesser Crested Tern, Roseate Tern, Wedge-tailed Shearwater (breeding BIAs) • Whale Shark (foraging BIA) • Flatback Turtle, Green Turtle, Hawksbill Turtle (internesting buffer BIA, and internesting habitat critical to the survival of a species). Impacts associated with lighting are expected to be temporary and localised, however it is acknowledged that relevant persons may hold interests relevant to the values and	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
				sensitivities that may be impacted by this aspect.	
Underwater sound – • field support—vessel or helicopter operations during the petroleum activity (including installation and pre-commissioning, or IMR activities) within the OA • installation—acoustic surveys (MBES and SSS) associated with the pre-, as-trench, and post-lay surveys, as well as during rock stabilisation • IMR—acoustic surveys (MBES and SSS).	Marine environmental quality Marine fauna Cultural values	Interest and activity – Environmental conservation	Localised and temporary change in ambient underwater sound Auditory impairment, temporary threshold shift (TTS), permanent threshold shift (PTS), recoverable or non-recoverable injury to marine fauna Changes to cultural heritage values	Several BIAs or habitat critical to the survival of a species overlap with the Sound EMBA, including: • Pygmy Blue Whale (migration BIA) • Humpback Whale (migration BIA) Flatback, Green, and Hawksbill (internesting buffer BIA, internesting habitat critical to the survival of a species) • Whale Shark (foraging BIA). CAPL has undertaken underwater sound modelling which indicates localised and short-term behavioural impacts to transient individuals may arise from the activities. TTS and PTS 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 – • installation—presence of biofouling on subsea	Benthic habitat and communities	Interest and activity –	Displacement of, or competition	The OA is in water depths of ~25–1,350 m, is located offshore from the mainland coast and large	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
equipment used within the OA • field support—planned discharged of ballast water or the presence of biofouling on vessels undertaking activities within the OA.	Cultural values	Environmental conservation Cultural connections	with, native species.	ports, and the seabed is dominated by soft sediments such as sand and clay. Thus, the more favourable requirements of expansive hard substrate and sufficient light for IMP survival are not common within the OA. Although it is highly unlikely the activities in this EP would result in the introduction of IMPs, once established, IMPs 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.	First Nations people and/or representative bodies ENGOs
Planned discharges – surface • installation—FCS operations during installation and pre-commissioning • field support—vessel operations during the petroleum activity (including installation and pre-commissioning, or IMR activities) within the OA.	Marine environmental quality Marine fauna	Interest and activity – Environmental conservation	Localised and temporary reduction in water quality Changes to predator-prey dynamics	Impacts and risks associated with planned discharges from the vessels or FCS 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 or the FCS, 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 – subsea • installation—potential displacement of MEG from spools or SCSt piping; potential release of	Marine environmental quality Benthic habitats and communities	Interest and activity – Environmental conservation	Localised and temporary reduction in water quality	Impacts and risks associated with planned subsea discharges are expected to be limited to close to the release location and temporary in nature. It is unlikely	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
production fluids during tie-in to existing Jansz infrastructure; potential release of treated seawater (e.g. including biocide, corrosion inhibitor, etc.) from FCS ballast; acid wash or similar cleaning agent used to clean subsea infrastructure • IMR—acid wash or similar cleaning agent used to clean subsea infrastructure • pre-commissioning—discharge of MEG, fluorescein dye, and barrier fluids during testing			Alteration of benthic habitats and communities	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.	First Nations people and/or representative bodies
Electromagnetic emissions • pre-commissioning—testing of the HVSC, start-up and operation of the HVSC.	Marine fauna	Interest and activity – Environmental conservation	Behavioural disturbance of marine fauna	Several BIAs or habitat critical to the survival of a species also overlap with the OA, including: • Humpback Whale (migration BIA) • Pygmy Blue Whale (migration BIA) Flatback Turtle, Green Turtle, Hawksbill Turtle (internesting buffer BIA, internesting habitat critical to the survival of a species) • Whale Shark (foraging BIA). Given the predicted small disturbance radius of the EMF (up to ~20 m) of the HVSC, significant adverse effects to marine fauna behaviour are not expected to occur. In areas where the HVSC	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
				is exposed there may be a localised change in the EMF and this may cause a very localised and temporary behavioural responses to fauna within close proximity to the HVSC, however the worst case response identified is minor movement deviation.	
Unplanned seabed disturbance • installation— dropped object (e.g. infrastructure) or incorrect positioning of infrastructure • field support—dropped object (e.g. tools or equipment) from vessels, ROVs or AUVs (during installation and pre-commissioning, or IMR activities).	Benthic habitats and communities Cultural values	Interest and activity – Environmental conservation Cultural connections	Alteration of benthic communities and habitats	The potential impacts to benthic communities and habitats as a result of unplanned seabed disturbance would be limited to individual occurrences and localised impacts (i.e. area of impact limited to the size of dropped object or equipment). It is unlikely the functions and activities of relevant persons would be impacted by unplanned seabed disturbance, 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 • field support—waste lost overboard from vessels during installation and pre-commissioning, or IMR activities within the OA,	Marine fauna	Interest and activity – Environmental conservation	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

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
Unplanned release – loss of containment • using, handling, and transferring hazardous materials and chemicals on board (~1 m^3) • hydraulic line failure from equipment (~2 m^3) • failure during vessel refuelling (50 m^3).	Marine environmental quality Marine fauna	Interest and activity – Environmental conservation	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 the values and sensitivities that may be impacted by this aspect.	Government departments or agencies First Nations people and/or representative bodies ENGOs
Unplanned release – vessel collision • field support—vessel operations during the petroleum activity (including installation and pre-commissioning, or IMR activities) within the OA. Unplanned release – hydrocarbon system • installation—dropped infrastructure during installation activities at the Jansz field	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	Interest and activity – Environmental conservation Cultural connections 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 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 EMBA. Refer to Section 4.1 for information on the EMBA for the activity.	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

Environmental aspect (and aspect source)	Values and sensitivities	Function, interest, or activity	Potential impact or risk	Intersection	Category of persons or organisations
	Commercial shipping Scientific research Other commercial industries		Changes to cultural heritage values		Submarine cable operators Research organisations
Ground disturbance – shoreline spill response	Marine fauna Coastal communities Cultural values	Interest and activity – Environmental conservation Cultural connections	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 environmental 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 Tourism and recreation operators
Physical presence – oiled wildlife response	Marine fauna Coastal communities Cultural values	Interest and activity – Environmental conservation Cultural connections	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 environmental 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 Tourism and recreation operators

6.2.5.1 Self-identification

As part of the consultation process (Figure 6-1) CAPL publicly advertised the upcoming petroleum activity (refer to Section 6.2.2), 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 Section 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).

Two persons and one organisation self-identified during consultation—two of these were determined to be relevant (see rationale in Table 6-4), one was not (refer to summary in appendix d).

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 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 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
- provided a response to the objection or claim, and ensured the response was captured in the EP.

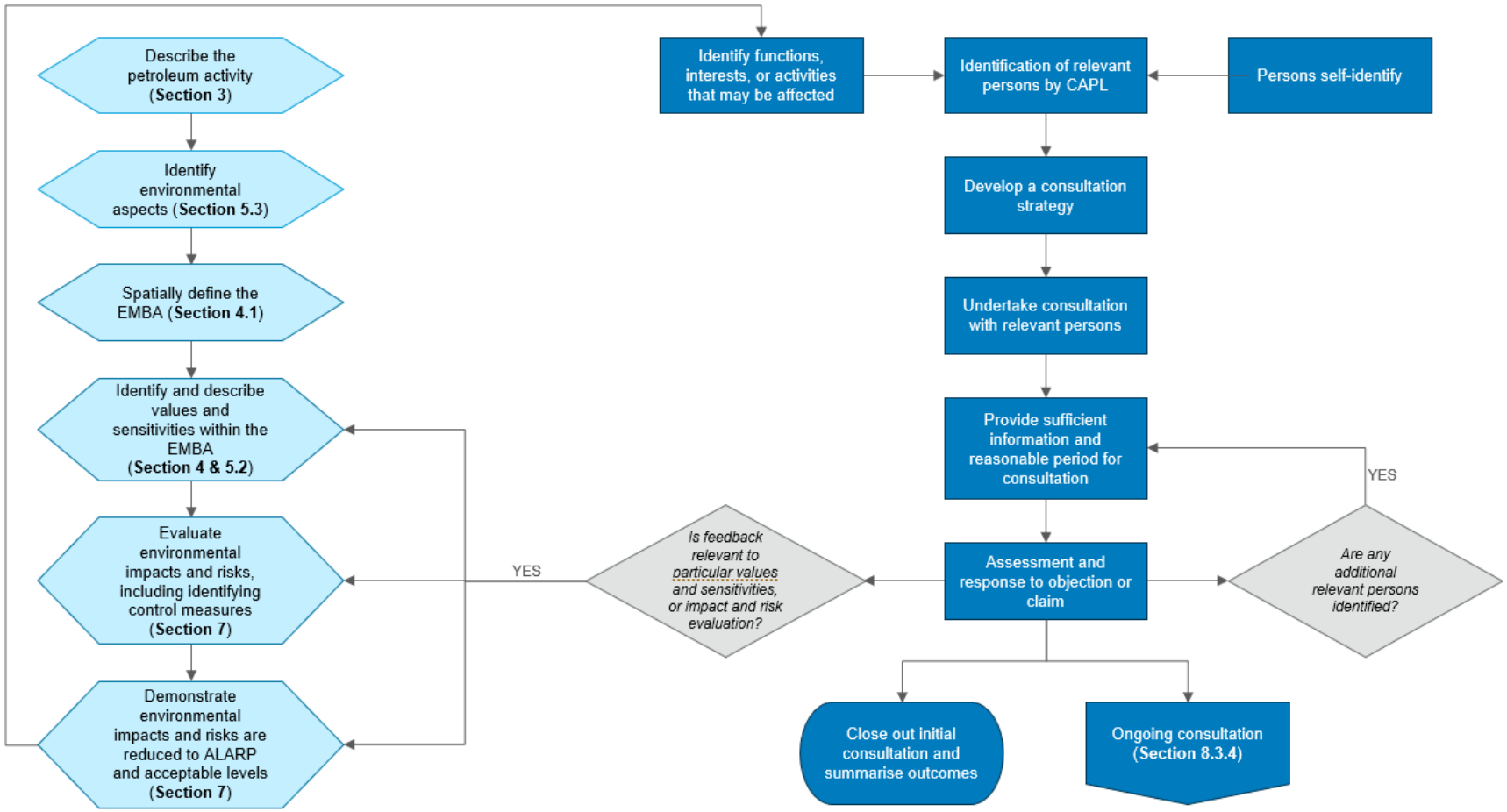


Figure 6-1: Relevant persons consultation process

6.3.1 Relevant persons under regulation 25(a)

In accordance with the OPGGS(E)R, relevant persons include the Commonwealth, State or Northern Territory agencies or authorities to which activities under this EP may be relevant (Section 6.2.1).

CAPL determined relevant persons under these regulations by considering:

- the spatial extent of the EMBA
- the environmental aspects, and potential environmental impacts and risks associated with the petroleum activity
- the responsibilities of the Commonwealth, State or Northern Territory agency or authority, 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. 24).

The Commonwealth, State or Northern Territory agencies or authorities 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(b)

In accordance with the OPGGS(E)R, the department of the responsible State Minister is a relevant person (Section 6.2.1).

The petroleum activity within scope of this EP occurs in Commonwealth waters, off the coast of WA. As such, the Department of Energy, Mines, Industry, Regulation and Safety (DEMIRS) 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(c)

In accordance with the OPGGS(E)R, if the petroleum activity occurs in the Principal Northern Territory offshore area, the department of the responsible Northern Territory Minister is a relevant person (Section 6.2.1).

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

6.3.4 Relevant persons under regulation 25(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 6.2.1). The considerations for determining the relevance of a person or organisation are described in Section 6.2.1 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: • fishery management area intersects with the EMBA, and a record of recent active fishing effort (based on annual ABARES data) occurring within the EMBA • 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. 30) 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 with 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 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 EMBA • where an AMP is present within the 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 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 with the EMBAs
Other petroleum titleholders	• CAPL’s operating experience in the NWS and pre-existing knowledge of other petroleum operators

Category of persons or organisations	Considerations for identifying a relevant person
	• other Commonwealth (based on spatial data from NOPTA) petroleum titles that intersect with the EMBA, and with current or proposed activities occurring (based on publicly available EPs from NOPSEMA's EP submission website) within the EMBA • other State (based on spatial data from DEMIRS) petroleum titles that intersect with the EMBA, and with current or proposed activities occurring (based on publicly available EP summaries from DEMIRS EARS database) within the 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 EMBA • where an AMP is present within the EMBA, a review of the 'authorisations issued' from Parks Australia (Ref. 33) • 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 with the 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 this J-IC installation and pre-commissioning EP

Relevant person	Rationale
Commonwealth, State or Northern Territory agency or authority (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 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. 24) 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 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. 24) 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 3.5.1), a safety exclusion zone will be requested around the vessels (Section 3.5.1). 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. 24) AMSA is a relevant agency for consultation where a proposed activity may impact on the safe navigation of commercial shipping in Australian waters. The EMBA for this EP intersects with shipping routes (Section 4.4.4). Therefore, the activities under the EP may be relevant to the AMSA.
Department of Agriculture, Fisheries and Forestry (DAFF)	As identified in NOPSEMA's consultation guideline (Ref. 24) 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 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. 24) 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 • an environmental incident occurs in Commonwealth waters surrounding an AMP and may impact on the values within the park. The EMBA for this EP intersects with 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. 24) DCCEEW is a relevant agency for consultation where an activity has the potential to directly or indirectly adversely impact on protected UCH. The EMBA for this EP overlaps with UCH sites (shipwrecks) (Section 4.6). Therefore, the activities under the EP may be relevant to the DCCEEW.
Department of Defence (DoD)	As identified in NOPSEMA's consultation guideline (Ref. 24) DoD is a relevant agency for consultation where:

Relevant person	Rationale
	• 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 intersect with the EMBA (Section 4.4.6). Therefore, the activities under the EP may be relevant to the DoD.
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 EMBA for this EP intersects with 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. 31), 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 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. 32). While the unplanned hydrocarbon release events identified for this EP will occur in Commonwealth waters, some areas of State waters may be exposed (Section 7.15). Therefore, the activities under the EP may be relevant to DoT.
Department of Water and Environment (DWER)	DWER supports Western Australia'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 Western Australia'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.
Department of the responsible State Minister (regulation 25(1)(b))	
Department of Energy, Mines, Industry, Regulation and Safety (DEMIRS)	DEMIRS is the department of the responsible State Minister. Therefore, they are considered a relevant person as per Regulation 25(1)(b) of the OPGGS(E)R.

Relevant person	Rationale
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	
Baiyungu Aboriginal Corporation (BAC) Baiyungu people	Baiyungu Country extends from Point Cloates (north of Carnarvon) along the coast to Point Quobba, then stretches east to Manberry Station and north to Winning Pool Station. A major area of significance is Coral Bay and neighbouring Cardabia Station (a pastoral station run by BAC and the Baiyungu people). The EMBA does not directly intersect with this area of coast, however the EMBA does extend into the offshore waters of the Gascoyne. No Native Title determination currently exists within the EMBA and this representative body have not been identified in an AMP Management Plan. However, given that the EMBA occurs offshore from the Gascoyne coast, and engagement with BAC identified that Sea Country is of recognised value to the Baiyungu people, the activities under the EP may therefore be relevant to this organisation and the Baiyungu people. Note: CAPL has also consulted NTGAC who also represents the Baiyungu people for Natite Title rights and interests.
Buurabalayji Thalanyji Aboriginal Corporation (BTAC) Thalanyji people	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 EMBA does not directly intersect with this area of coast, however the EMBA does extend into the offshore waters of the Pilbara. No Native Title determination currently exists within the EMBA and this group have not been identified in an AMP Management Plan. However, given that the 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 Natite Title rights and interests.
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) Baiyungu people Thalanyji people Yinggarda people	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 EMBA intersects with part of this area of coast, and the EMBA also extends into the offshore waters of the Pilbara and Gascoyne. Native Title determination WCD2019/016 intersects with the EMBA (Section 4.6.3). The Baiyungu, Thalanyji and Yinggarda People were also identified within the *North-west Marine Parks Network Management Plan* (Ref. 187) as having responsibilities for Sea Country in the Commonwealth Gascoyne Marine Park (Section 4.5.1). Therefore, the activities under the EP may be relevant to this RNTBC and the Baiyungu, Thalanyji and Yinggarda people.
Ngarluma Aboriginal Corporation (NAC) Ngarluma people	The NAC was registered in 2005 to represent, protect and support the interests of the Ngarluma and Yindjibarndi people. Ngarluma Country encompasses the interior hills, tablelands, river systems, and coastline of the west Pilbara region of WA, including the Burrup Peninsula and islands of the Dampier Archipelago.

Relevant person	Rationale
Yindjibarndi people	The EMBA does not directly intersect with this area of coast, however it does extend into the offshore waters of the Pilbara. No Native Title determination currently exists within the EMBA and this group have not been identified in an AMP Management Plan. However, given that the EMBA occurs offshore from the Pilbara coast, the activities under the EP may therefore be relevant to this RNTBC and the Ngarluma and Yindjibarndi people. Note: CAPL has also consulted NYFL who also represents the Ngarluma and Yindjibarndi people.
Ngarluma Yindjibarndi Foundation Ltd (NYFL) Ngarluma people Yindjibarndi people	The NYFL is the Traditional Owner organisation that delivers social and economic outcomes for its members and broader community. The Ngarluma and Yindjibarndi lands in the Pilbara area of WA stretch from the Pilbara coast to the Millstream-Chichester National Park to the south, from around Whim Creek in the east to just west of Pannawonica. The EMBA does not directly intersect with this area of coast, however it does extend into the offshore waters of the Pilbara. No Native Title determination currently exists within the EMBA and this group have not been identified in an AMP Management Plan. However, given that the EMBA occurs offshore from the Pilbara coast and engagement with NYFL identified that Sea Country is of recognised value to the Ngarluma and Yindjibarndi people, the activities under the EP may therefore be relevant to this organisation and the Ngarluma and Yindjibarndi people. Note: CAPL has also consulted NAC who also represents the Ngarluma and Yindjibarndi people.
Mardathoonera Cultural Heritage Pty Ltd (MCH)	An individual contacted CAPL via phone and identified themselves as a Traditional Custodian for the Mardathoonera people. The Mardathoonera people are a Pilbara language group, and engagement with the MCH identified that Barrow Island was culturally significant. Given that Barrow Island is within the EMBA (and within ~5.5 km to the OA) for this EP, CAPL considers that MCH 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.
Murujuga Aboriginal Corporation (MAC) Ngarluma people Mardudhunera people Yaburara people Yindjibarndi people Wong-Goo-Tt-Oo people	The MAC was incorporated in 2006 and is the approved corporate body for the Burrup and Maitland Industrial Estates Agreement. MAC has members from five traditional Aboriginal language groups from the Pilbara region: Ngarluma, Yaburara, Mardudhunera, Yindjibarndi, and Wong-Goo-Tt-Oo. MAC is not a PBC for the purposes of native title; instead MAC holds the freehold title to Murujuga National Park. The EMBA does not directly intersect with the Burrup Peninsula or Dampier Archipelago, however it does extend into the offshore waters of the Pilbara. No Native Title determination currently exists within the EMBA and this group have not been identified in an AMP Management Plan. However, given that the EMBA occurs offshore from the Pilbara coast, the activities under the EP may therefore be relevant to this organisation and the Ngarluma, Yaburara, Mardudhunera, Yindjibarndi, and Wong-Goo-Tt-Oo people. Note: CAPL has also consulted NAC who also represents the Ngarluma people, NYFL who represent the Ngarluma and Yindjibarndi people, and WAC who also represents the Mardudhunera and Yaburara people.

Relevant person	Rationale
Robe River Kuruma Aboriginal Corporation (RRKAC) RRK people	RRKAC is the RNTBC for the Robe River Kuruma (RRK) native title determined areas. The RRK people have traditional rights to an area in the Pilbara. Their lands lie within the Shire of Ashburton, and around the township of Pannawonica, and comprise part of the Fortescue River and the complete river system of the Jajiwurra (Robe River), in the most westerly part of the Hamersley Range. The EMBA does not directly intersect with the Jajiwurra river mouth, however it does extend into the offshore waters of the Pilbara. No Native Title determination currently exists within the EMBA and this group have not been identified in an AMP Management Plan. However, given that the EMBA occurs offshore from the Pilbara coast, the activities under the EP may therefore be relevant to this organisation and the RRK people.
Wirrawandi Aboriginal Corporation (WAC) Mardudhunera people Yaburara people	The WAC was registered in 2018 to hold and manage the native title rights and interests for the Mardudhunera and Yaburara people. Mardudhunera and Yaburara Country is in the Pilbara region (approximately between Maitland and Robe rivers). The 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) intersects with the EMBA (Section 4.6.3). Therefore, the activities under the EP may be relevant to this RNTBC and the Mardudhunera and Yaburara people.
Yinggarda Aboriginal Corporation (YAC) Yinggarda people	The YAC was registered in 2019 to represent, protect and support the interests of the Yinggarda people. Yinggarda Country is in the Gascoyne region and includes the township of Carnarvon. The EMBA does not directly intersect with this area of coast, however it does extend into the offshore waters of the Gascoyne. Native Title determination WCD2019/016 intersects with the EMBA (Section 4.6.3). Therefore, the activities under the EP may be relevant to this RNTBC and the Yinggarda people.
Yamatji Marlpa Aboriginal Corporation (YMAC)	YMAC is the native title representative body (NTRB) for the Traditional Owners of the Pilbara, Midwest, Murchison, and Gascoyne regions of Western Australia. The EMBA occurs within waters (and some coastal areas) of the Gascoyne and Pilbara (Figure 4-1). There are Native Titles that extend into the EMBA (Section 4.6.3). YMAC is also the NTRB identified in the North-west Marine Parks Network Management Plan (Ref. 67) for the Yamatji region, as associated with the Ningaloo Marine Park (Section 4.5.1). Therefore, the activities under the EP may be relevant to this NTRB.
Commercial fishery licence holders and/or representative bodies	
Aquaculture Council of Western Australia Commonwealth Fisheries Association	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 EMBA (Section 4.4). As such, these organisations have functions, interests, or activities, that may be affected by the activities to be carried out under the EP.

Relevant person	Rationale
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 EMBA (Section 4.4). 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 EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, 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.
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 EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, 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	Ashburton Anglers are a local fishing club. The EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, 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.
Apache Fishing Charters	Recreational fisheries, tourism and recreational activities have been identified as occurring within or adjacent to the EMBA (Section 4.4). As such, these businesses may have functions, interests, or activities, that may be affected by the activities to be carried out under the EP.
Archipelago Adventures	
Blue Horizon Charters	
Blue Juice Charters	
Blue Lightning Fishing Charters	
Bluesun 2 Boat Charters	
Cape Immersion Tours	
Ebb and Flow / Glass Bottom Boats	
Exmouth Dive and Whalesharks Ningaloo	
Image Dive and Charters	

Relevant person	Rationale
Live Ningaloo	
Mackerel Islands and Onslow Beach Resort	
Mahi Mahi Charters	
Montebello Island Safaris	
Ningaloo Blue Dive	
Ningaloo Glass Bottom Boat	
Ningaloo Whaleshark n Dive	
Ningaloo Whaleshark Swim	
Sail Ningaloo	
Top Gun Charters	
View Ningaloo	
Wilderness Island	
Local government departments or agencies	
Exmouth Chamber of Commerce and Industry	The EMBA for this EP does intersect with the small areas of coast (Section 4.3.5.1). Therefore, local governments may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.
Onslow Chamber of Commerce and Industry	
Shire of Ashburton	
Shire of Exmouth	
WA World Heritage advisory committees	
Ningaloo Coast World Heritage Advisory Committee (NCWHAC)	The NCWHAC provides advice to the Commonwealth and State Environment Ministers on the protection, conservation and management specific to Ningaloo Coast World Heritage Area. The EMBA for this EP does intersect with Ningaloo Coast World and National heritage areas (Section 4.6). Therefore, NCWHAC is considered a relevant person under regulation 25(1)(d) of the OPGGS(E)R.

Relevant person	Rationale
Other petroleum titleholders	
BP	Petroleum operations have been identified to occur within the spatial extent of the 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	
Kato Energy / Kato NWS Pty Ltd	
Kufpec	
PGS Australia Pty Ltd	
Santos	
SapuraOMV Upstream	
Terrafirma Offshore Pty Ltd	
TGS NOPEC Geophysical Company Pty Ltd	
Vermillion Oil and Gas	
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 EMBA (Section 4). Therefore, NGOs 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 at Rankin Bank. The EMBA for this EP overlaps Rankin Bank (Section 4.3.1). Therefore, AIMS may be considered relevant persons under regulation 25(1)(d) of the OPGGS(E)R.

Relevant person	Rationale
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	A representative from the Care for Hedland Environmental Association contacted CAPL via the Online Consultation Hub to self-identify for consultation. Care for Hedland 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 the EMBA is >200 km from Port Hedland, and any direct interaction with Port Hedland is not predicted to occur 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. 56), 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.
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.
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	
Australian Council of Prawn Fisheries	Australian Council of Prawn Fisheries is made up of industry bodies and companies that deal with wild prawns or the prawn industry. Commercial prawn fisheries operate outside the boundary of EMBA, however under regulation 25(1)(e) CAPL selected to include the council in consultation.
Northern Prawn Fishery	Northern Prawn Fishery targets prawns in northern Australian waters. The Northern Prawn Fishery operates outside the boundary the EMBA, however under regulation 25(1)(e) CAPL selected to include the fishery in consultation.
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 EMBA, however under regulation 25(1)(e) CAPL selected to include the council in consultation.
Cygnet Bay Pearl Farm	These pearling operators have operations occurring outside the boundary of EMBA, however under regulation 25(1)(e) CAPL selected to include the council in consultation.
Maxima Pearling Company	

Relevant person	Rationale
Paspaley Pearls	
Western Rock Lobster Council	Western Rock Lobster (WRL) is the peak industry body representing the interests of the western rock lobster fishery. The WRL fishery operates outside the boundary of EMBA, however under regulation 25(1)(e) CAPL selected to include the WRL Council in consultation.
Tourism and recreation operators	
Tourism Western Australia	The EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Karratha Tourism and Visitor Centre	The EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Local government departments or agencies	
Carnarvon Chamber of Commerce	The EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
City of Karratha	
Gascoyne Development Commission	
Karratha and Districts Chamber of Commerce and Industry	
Shire of Carnarvon	
Other	
Member for Pilbara	The EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Member of Legislative Authority – North West Central	
Member of Mining and Pastoral Region	
Minister for Environment WA	The Minister of the Environment is tasked with the protecting the natural environment and promoting conservation. The EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.

Relevant person	Rationale
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 EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, within the Pilbara and Gascoyne regions, and 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 EMBA for this EP intersects Commonwealth and State waters around Exmouth, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Gascoyne Junction Community Resource Centre	The EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Coral Bay Progress Association	
WA Coastal and Marine Community Network	
WA Marine Science Institute	The Western Australian Marine Science Institution (WAMSI) 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 EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, within the Pilbara and Gascoyne regions, and therefore under regulation 25(1)(e) CAPL selected to include this organization in consultation.
Western Australian Museum	The Western Australian Museum is the State's premier cultural organisation, housing WA's scientific and cultural collection. The EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, 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 EMBA for this EP intersects Commonwealth and State waters offshore, and some small areas of coast, 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 EMBA for this EP 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 (IFAW)	
Greenpeace	

Relevant person	Rationale
Coral Futures Corporation	
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 6.1, 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."*[27]

As stated above in Section 6.1, 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[28].

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 Tipakalipp*a "[*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*."[29]

Regulation 33(1)(a) and 33(7)(a) of the OPGGS(E)R requires that if NOPSEMA is reasonably satisfied that the EP meets the EP acceptance criteria 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[30].

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

[27] Paragraph 89 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21).

[28] Paragraphs 55–57 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21).

[29] Paragraph 136 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21).

[30] Paragraphs 31 and 32 of *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Ref. 21).

law, and met the requirements of regulation 25. 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 6.2.2) and a reasonable period of time (Section 6.2.3) 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). 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 songlines), 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:

- it has been over 12 months since consultation on this EP commenced and information on the J-IC installation, including potential impact and risks associated with the petroleum 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, including the National Indigenous Times, as outlined in Section 6.2.2
- CAPL has attended 25 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
- two persons and one organisation self-identified during the consultation period indicating that CAPL has been successful in promoting its consultation efforts.

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).

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.

7 environmental impact and risk assessment and management strategy

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

Ref.	Aspect	Impact	Risk			Decision Context (A/B/C)	ALARP	Acceptable
		C^	C	L	R			
7.1	Physical presence—other marine users	–	6	4	9	A	Yes	Yes
7.2	Physical presence—marine fauna	–	6	3	8	A	Yes	Yes
7.3	Seabed disturbance	5	5	6	10	A	Yes	Yes
7.4	Air emissions	6	6	6	10	A	Yes	Yes
7.5	Light emissions	6	5	5	9	A	Yes	Yes
7.6	Underwater sound—continuous	5	5	3	7	A	Yes	Yes
7.7	Underwater sound—impulsive	6	6	4	9	A	Yes	Yes
7.8	Invasive marine pests	–	2	6	7	A	Yes	Yes
7.9	Planned discharges—surface	6	6	6	10	A	Yes	Yes
7.10	Planned discharges—subsea	6	6	6	10	A	Yes	Yes
7.11	Electromagnetic emissions	–	6	4	9	A	Yes	Yes
7.12	Unplanned seabed disturbance	–	6	4	9	A	Yes	Yes
7.13	Unplanned release—waste	–	6	5	10	A	Yes	Yes
7.14	Unplanned release—loss of containment	–	5	5	9	A	Yes	Yes
7.15	Unplanned release—vessel collision	–	4	5	8	A	Yes	Yes
7.16	Unplanned release—hydrocarbon system	–	–	–	–	A	Yes	Yes
7.17.4.1	Ground disturbance – shoreline spill response	–	5	5	9	A	Yes	Yes
7.17.4.2	Physical presence – oiled wildlife response	–	5	5	9	A	Yes	Yes

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

^For aspects identified as causing both 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 Physical presence—other marine users

Source

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

- installation—permanent presence of the SCSt, SCSM, HVSC, MV umbilicals, and other associated subsea infrastructure, and subsea stabilisation (e.g. rock berms, concrete mattresses) within the OA
- installation—permanent presence of FCS (at the surface) and the associated subsea mooring system within the OA
- field support—temporary (short or long-term) presence of vessels within the OA during installation and pre-commissioning, or IMR activities.

Potential impacts and risks

Impacts	C	Risks	C
N/A	–	Unplanned interactions with other marine uses may result in:	
		• disruption to commercial shipping or fishing	6
		• entanglement of fishing gear on subsea structures	6
		• disruption to other petroleum activities	6

Consequence evaluation

The physical presence of subsea and surface infrastructure associated with this petroleum activity is contained wholly within the OA. Vessels undertaking activities will also be present within the OA but only have a temporary presence. The duration of vessel presence will vary with activity, ranging from ~2 days (each rock dumping trip) to ~5–6 months for SCSt installation campaigns. The OA occurs in water depths ~25–1,350 m, and comprises a total area of ~744 km^2.

The potential for unplanned interactions between other marine users and subsea structures may occur where these users interact with either the seafloor or water column where these structures exist. While most of the infrastructure installed will be on the seafloor, the floating FCS will have mooring lines extending from the upper water column to the suction piles on the seafloor.

Marine users that have the potential to interact with the seafloor have been identified as commercial fisheries that utilise trawling or trap fishing methods. Marine users that have the potential to interact with the water column have been identified as commercial fisheries that use line fishing methods. The potential risks to fishing vessels from subsea structures includes disruption to fishing efforts caused by the need for vessels to avoid the infrastructure, or physical damage (via entanglement) to fishing gear that contacts the infrastructure.

Of the commercial fisheries identified in Section 4.4.1 that have fishery management areas that intersect with and recent fishing effort recorded within the OA, one uses trawl, two use trap, and two use line fishing methods.

The WA Mackerel Managed Fishery and Pilbara Line Fishery both use line fishing methods. The spatial extent of potential interaction for these fisheries is limited to within the vicinity of the FCS and its mooring system (in ~1,290 m water depth). However, the main species targeted within these fisheries (e.g. Bluespotted Emperor, Red Emperor, Rankin Cod, Ruby Snapper, and Spanish Mackerel) are typically found in water depths of <500 m (Ref. 265). As such, negligible interaction between these fisheries and the presence of the FCS mooring system is expected to occur and this has not been evaluated further.

The OA overlaps with ~0.2% of the total fishery management area for the Commonwealth North West Slope Trawl Fishery. The entire fishery has a small number of active permits and vessels (e.g. six permits with four vessels active during the 2020-2021 season [Ref. 54]). The fishery also does not regularly record fishing effort within the OA (e.g. only two years [2015 and 2020] out of the 2015-2020 period recorded fishing effort within a single [one block per year] 60 nm graticular reporting block that intersected with the OA ; Section 4.4.1).

The WA Pilbara Trap Managed Fishery and Pilbara Crab Managed Fishery intersect with the OA. The Pilbara Crab Managed Fishery does not regularly record fishing effort within the OA (e.g. only one year [2016] out of the 2012–2021 period recorded fishing effort within a single 60 nm graticular reporting block that intersected with the OA. Recorded fishing effort for the Pilbara Trap

Managed Fishery is also low with ≤3 vessels present within the 60 nm fishery grid blocks that intersect with the OA (Section 4.4.1.2).

Subsea infrastructure associated with the Gorgon Project has been in place within the OA since 2012, and to date, no incidences of commercial fishing activities interacting with the infrastructure has been communicated to CAPL. Consequently, the long-term presence of additional subsea structures is not expected to result in a significant impact to commercial fishing operations (via loss of catches or damage to fishing equipment). Any deviation required by fishing vessels around the subsea structures is not expected to impact on the functions, interests, or activities of commercial fisheries.

The stationary presence of the FCS and the use of vessels during the petroleum activity has the potential to result in a disruption to other marine users, including commercial shipping or fishing vessels. During parts of the offshore installation scopes (e.g. associated with the FCS or the SCSt), several vessels may be in the field at any one time.

As identified in Section 4.4.1, there are five vessel-based commercial fisheries that have recent fishing effort that overlaps with the OA. Fishing effort records obtained from DPIRD (Ref. 55) for the four State-managed commercial fisheries indicated that fishing effort within the OA varies each year, but is typically low with <3 vessels recorded as present within the graticular reporting blocks that intersect the OA (Ref. 55). As noted above, fishing activity within the OA associated for the Commonwealth-managed fishery is also low.

Commercial vessel traffic density within and around most of the OA is relatively low, including within the part of the OA that intersects one of AMSA's north-west coast shipping fairways (Figure 4-24). This fairway intersection occurs over part of the OA that is associated with the installation of the HVSC and so vessel presence within this area will be temporally and spatially restricted to this scope of activities. The OA extending around the FCS is >5 km northwest of the shipping fairway.

Therefore, the presence of vessels or the FCS within the OA is not expected to significantly adversely affect commercial fishing or shipping operators. Any deviation required by these vessels is not expected to impact on their respective functions, interests, or activities.

During the installation of the shallow water crossings of existing pipelines and umbilicals (Section 3.2.2.1), the activities of other titleholders have the potential to be disrupted, if any concurrent operations were to occur. Consultation with other titleholders has not indicated any potential for concurrent (e.g. inspection or maintenance) activities on the existing pipelines or umbilicals. Given the short duration (~3–4 weeks) for all shallow water crossing installations, this is not expected to impact on the functions, interests, or activities of other titleholders, and has not been evaluated further.

In summary, the physical presence of the subsea infrastructure, FCS (including its mooring system), or vessels is not expected to cause significant impacts to other marine users, and the risks are considered to have limited potential consequences. Therefore, CAPL has ranked the potential consequence to other marine users from physical presence as Incidental (6).

ALARP decision context justification

The installation of subsea infrastructure, offshore facilities, and the use of vessels are common and well-practised activities 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 received regarding the risk of vessel collision within designated shipping fairways, use of appropriate lights and shapes on vessels, and notification requirements to JRCC and AHO. These claims were responded to by CAPL (see summary in 'external context' below, and within appendix d.

The risks arising from the physical presence of infrastructure or 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

Control measure	Description
Relevant persons consultation—Ongoing consultation (notifications)	Communicating the activity details, location, requested safety exclusion area (i.e. 500 m radius buffer around the vessels undertaking installation activities), and presence of vessels to other marine users ensures they are informed and aware, thereby reducing the risk of unplanned interactions. 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),

	where requested, as part of ongoing consultation (as required by regulation 22(15) of the OPGGS(E)R, and described in Section 8.3.4) relevant persons that have requested ongoing notifications will also be notified of to the commencement and completion of the petroleum activity (Table 8-5).
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* (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. Maritime safety information (radio-navigation warnings 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. 36) 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.
Watchkeeping	Marine Order 28—Operations standards and procedures sets out requirements and responsibilities for vessel crew, including watchkeeping standards.
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.
Automatic identification system (AIS)	Marine Order 27—Safety of navigation and radio equipment sets out requirements for safe navigation, radio equipment and communications. The AIS is a maritime communications device, and AIS equipped vessels (shipborne AIS) can use it to send and receive identifying information. This identifying information can be displayed on an electronic chart, computer display, chart plotter or compatible navigation radar. As such, this identifying information can: • aid in situational awareness • provide a means to assist in collision avoidance.
Managing Safe Work (MSW) process	CAPL's *Managing Safe Work OE Process* (Ref. 35) ensures that workplace safety and health hazards are assessed and managed. The permit to work (PTW) system is part of this process and includes simultaneous operations (SIMOPS) and hazard analysis. Where required under the MSW process, a SIMOPS Plan will be developed to identify and manage hazards arising from the J-IC installation and pre-commissioning activities and other CAPL planned petroleum activities when occurring within the same area. There are currently no planned activities under CAPL operational control scheduled to occur for the Gorgon or Wheatstone subsea infrastructure during the proposed J-IC installation period, and as such no SIMOPS Plan is required. If a SIMOPS Plan is required to be developed because of a change in schedule or project requirements, these will be in place prior to the activities under this EP commencing.

<table>
<tr><td>Concurrent operations plan (COP)</td><td colspan="2">Where required, a COP (or equivalent) will be developed to identify and manage hazards arising from the J-IC installation and pre-commissioning activities and other planned petroleum activities when occurring within the same area.
No potential for concurrent (non-CAPL) petroleum activities was identified during consultation with relevant persons, and as such no COP is required.
If a COP is required to be developed because ongoing consultation with other operators identifies concurrent operations, these will be in place prior to the activities under this EP commencing.</td></tr>
<tr><td colspan="3">Additional control measures and cost benefit analysis</td></tr>
<tr><td>Control measure</td><td>Benefit</td><td>Cost</td></tr>
<tr><td>N/A</td><td>N/A</td><td>N/A</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 activities within the scope of this EP, the slow-moving nature of vessels within the OA, and the limited spatial area of activities, the likelihood of interaction with other marine users is considered low. Interaction with infrastructure is expected to be limited based upon CAPL operational experience. As such, CAPL consider that the likelihood of the consequence occurring is Unlikely (4).</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 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.</td></tr>
<tr><td>Relevant environmental legislation and other requirements</td><td colspan="2">Legislation and other requirements considered relevant for this aspect include:
• Navigation Act 2012 (Cth).
CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.
<table><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>Navigation Act 2012 (Cth)
Vessel watchkeeping as per Marine Order 28</td><td>Vessel watchkeeping requirements has been incorporated into the watchkeeping control measure.</td></tr><tr><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>Navigation Act 2012 (Cth)
Use of AIS as per Marine Order 27</td><td>The use of shipborne AIS has been incorporated into the automatic identification system control measure.</td></tr></table></td></tr>
<tr><td>Internal context</td><td colspan="2">These CAPL management processes or procedures were deemed relevant for this aspect:
• Marine Standard Non Tankers: Corporate OE Standard (Ref. 36)</td></tr>
</table>

	• *Managing Safe Work OE Process* (Ref. 35) Control measures related to the above management process have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.	
External context	During relevant persons consultation, claims regarding the risk of vessel collision within designated shipping fairways, use of appropriate lights and shapes on vessels, and notification requirements to JRCC and AHO were received (appendix d). CAPL has confirmed: • part of the OA (associated with HVSC installation) for this EP intersects with one of the NWS shipping fairways • use of appropriate signals (lighting, shapes) on vessels have been included within a revised control measure added to the EP (refer to 'vessel lighting and signals' control) • notifications to JRCC and AHO are included within standard control measures (refer to 'maritime safety information' control) and notification requirements (refer to Table 8-5). No further objections or claims were raised regarding interaction with other marine users arising from the petroleum 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	**Environmental performance standard**	**Measurement criteria**
Other marine users are aware of the petroleum activity	**Relevant persons consultation—Ongoing consultation (notifications)** Relevant persons that have requested notifications will be advised of the commencement and expected completion dates	Relevant persons consultation records
	Maritime safety information Notify relevant agency 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	Records of lodgement of notification to relevant agency
	Marine Standard Vessel crew will meet the minimum competency requirements as per the Chevron Marine Standard	Records indicate that vessel crews meet the minimum competency requirements of the Chevron Marine Standard
	Watchkeeping Vessels will implement watchkeeping standards in accordance with Marine Order 28	Records indicate that watchkeeping was undertaken in accordance with the requirements of Marine Order 28 during the petroleum activity
	Vessel lights and signals In accordance with regulatory requirements, vessels will implement light and signals appropriate to the nature of their operations	Records indicate that vessel lights and signals were consistent with the requirements of COLREGS and the *Navigation Act 2012 (Cth)* during the petroleum activity

	Automatic identification system Vessels will use shipborne AIS during the petroleum activity	Records indicate that shipborne AIS was used by the vessel/s during the petroleum activity
Reduce disruption to other titleholders' petroleum activities within the OA from vessel activity associated with the petroleum activity	**MSW process** CAPL will develop and implement SIMOPS Plan(s) to manage the petroleum activity and other planned petroleum activities within CAPL operational control within the OA	Records indicate that if other concurrent CAPL activities within the OA are identified, a SIMOPS Plan will be developed and in place prior to the petroleum activity commencing
	Concurrent operations plan Where required, CAPL will develop and implement COPs (or equivalent) to manage the petroleum activity and other (non-CAPL) planned petroleum activities within the OA	Records indicate that if other concurrent activities within the OA are identified, a COPs (or equivalent) will be developed and in place prior to the petroleum activity commencing

7.2 Physical presence—marine fauna

Source

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

- field support—temporary (short or long-term) presence of vessels within the OA during installation and pre-commissioning, or 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
		• changes to cultural heritage values	6

Consequence evaluation

Injury or death of marine fauna

Surface-dwelling fauna are 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 or habitat critical to the survival of a species also overlap with the OA, including:

- Humpback Whale (migration BIA)
- Pygmy Blue Whale (migration BIA)
- Flatback Turtle, Green Turtle, Hawksbill Turtle (internesting buffer BIA, and internesting habitat critical to the survival of a species)
- Whale Shark (foraging BIA).

A review of the documents made or implemented under the EPBC Act for all threatened and/or migratory cetacean, shark, and turtle species that may be present within the OA (i.e. Fin Whale [Ref. 58], Sei Whale [Ref. 59], Blue Whale [Ref. 60], Whale Sharks [Ref. 57], and Flatback, Green, and Hawksbill turtles [Ref. 56],) indicates that either vessel disturbance or interaction (such as collisions) are a key threat to the recovery of the species.

For cetacean species that may be present within the OA, these documents indicate that management actions are limited to reporting of incidents via the national database (refer to incident reporting requirements in Section 8.4.2) and ensuring that the risk of vessel strike is assessed (see the 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. 61).

The *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 60) 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. 62) 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 >14 knots. Laist et al. (Ref. 62) showed that high speed vessels travelling >14 knots, were involved in 15% of the 40 accounts of ship strikes reported worldwide. Given that vessels will be stationary or slow moving (<5 knots) whilst undertaking the activities within the scope of this EP, any interaction with marine fauna would not be expected to cause severe injuries.

Vessel disturbance and strike is listed as a known current and future threat for the Humpback Whales (Ref. 266). Humpback Whales are one of the most frequently reported whale species involved in vessel strikes worldwide (Ref. 62).

The OA overlaps with the migration BIA for Humpback Whales, and as such, there is the potential for whales to be present within this area during the predicted migration periods (June to October). The part of the OA that intersects with the Humpback Whale BIA is associated with the installation of the HVSC. Depending on specific activity timing, there is the potential for overlaps with the predicted migration periods. Studies (Ref. 223) suggest that northbound Humpback Whales tend to travel 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.

The OA also overlaps with the migration BIA for Pygmy Blue Whales. The part of the OA that intersects with the Pygmy Blue Whale BIA is associated with the installation of the FCS, HVSC and SCSt. Depending on specific activity timing, there is the potential for overlaps with the predicted migration periods. However, it is expected based on satellite tracking and acoustic detection studies that Pygmy Blue Whales are likely to travel predominantly to the north-west of the OA in deeper waters, particularly on their southern migration (November to December), but also during the northern migration (April to August) (Section 4.3.3.1.2).

There have been few recorded instances of cetacean deaths in Australian waters. Mackay et al. (Ref. 64) 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. The death of a Bryde's Whale in Bass Strait in 1992 (Ref. 63) was also recorded, noting this data indicates deaths are more likely to be associated with container ships and fast ferries.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 56) identifies vessel disturbance as a key threat; however, it also notes that this is particularly an issue in shallow coastal foraging habitats, internesting areas with high numbers of recreational and commercial craft, or in areas of marine development. The OA within this EP occurs in Commonwealth waters (at its shallowest the OA is ~25 m water depth, and ~5.5 km from nearest coast), but is not within an area of high vessel usage or large coastal (e.g. ports) developments. The part of the OA that intersects with BIAs or habitat critical for survival for marine turtle species is associated with HVSC installation activities.

The Recovery Plan (Ref. 56) defines the internesting habitat critical to the survival of a species as a distance seaward from nesting habitat critical to the survival of a species as 60 km for Flatback Turtles and 20 km for Green and Hawksbill turtles (Ref. 56). Recent studies (Ref. 75) have indicated that the internesting behaviour of Flatback Turtles on the NWS appears more spatially restricted than that suggested by the Recovery Plan (Ref. 56). Whittock et. al. (Ref. 75) reported that Flatback Turtles preference habitats within proximity of the coast and at relatively shallow depths during the internesting periods. Unsuitable Flatback Turtle internesting habitat was defined as waters >25 m deep and >27 km from the coast (Ref. 75). This suggests that although the OA does overlap with some internesting habitat critical for the survival of Flatback Turtles, due to the OA being located offshore in water depths ranging between ~25–1,350 m, and given that Flatback Turtle nesting occurs on the east coast beaches of Barrow Island (Ref. 254) (i.e. opposite side of the island to the OA), the OA is not likely to provide preferred internesting habitat for this species.

Green and Hawksbill Turtles have also demonstrated spatially restricted behaviour during internesting, and have been recorded as staying with within 5 km of Barrow Island (Ref. 200) and within shallow coastal waters (Ref. 200). Both Green and Hawksbill turtles are known to nest on the west coast of Barrow Island (Ref. 254). Given the depth and distance of the OA (>25 m water depth, and >5.5 km from Barrow Island), the majority of the OA is not likely to provide preferred internesting habitats for these species.

A review of the documents made or implemented under the EPBC Act for Whale Sharks indicate that conservation 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) and along the northward migration route that follows the northern Western Australian coastline along the 200 m isobath. The part of the OA that intersects with this Whale Shark BIA is associated with HVSC installation activities. The largest vessels associated with these scopes are the CLV and rock dumping vessel.

Whale Sharks are known to spend considerable time close to the surface, thereby increasing their vulnerability to vessel strike. Whale Sharks tagged off WA (Ref. 65, Ref. 66) spent ~25% of their time <2 m from the surface and >40% of their time in the upper 15 m of the water column, making them vulnerable to collisions with smaller vessels as well as larger commercial vessels that have drafts greater than 20 m below the surface. Although the OA overlaps the Whale Shark foraging BIA, vessels will be stationary or slow-moving (<5 knots) 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. 325). Dugongs are known to occur around the islands of the Rowley Shelf such as Barrow Island, the Lowendal Islands and the Montebello Islands (Ref. 325); however Dugong populations are known to be greater in Exmouth Gulf or Shark Bay than around the offshore islands (Ref. 325; Ref. 326; Ref. 327). There are no known major seagrass meadows along the west coast of Barrow Island (Ref. 258) that are likely to be critical feeding habitats for Dugongs and therefore any presence within the OA is expected to be intermittent and transitory. 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. 328; Ref. 329). As such, similarly 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. 330; Ref. 329). 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. 331).

The threatened Short-nosed Seasnake or Leaf-scaled Seasnake 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. 302; Ref. 303). Other EPBC marine listed seasnake species may occur in broader habitats within the NWMR, and collision with vessels has been identified as a pressure 'of less concern' (Ref. 332).

Vessels within the OA will be stationary or slow-moving (<5 knots) whilst implementing the activities within the scope of this EP. Consequently, incidences of fauna strike are not expected considering the slow vessel speeds, generally low number of vessels within the OA at any time, and that incidents have been demonstrated to be very rare.

Nevertheless, if a fauna strike occurred and resulted in death, it is not expected to have a detrimental effect on the overall population and 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.

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), 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. 184; Ref. 314). One of the specific tangible values of Sea Country identified through consultation was marine fauna (e.g. whales, dugongs, turtles; Table 4-15). The consequence evaluations to these receptors are provided above.

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 recognize as part of their cultural heritage" (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives of from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15).

Songlines are paths that track across Country and skies, representing Indigenous knowledge that has been collected, protected and transmitted (Ref. 349). Songlines are living tools that embed and mediate history, ecological knowledge, relationships, ancestral beings, and cultural belonging on Country (Ref. 349). Certain songlines may be referred to as 'Dreaming Pathways' because of the tracks forged by Creator Spirits during the Dreaming (Ref. 316). Kearney et al (Ref. 318) 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. 350). For example, representatives from MCH identified that there are songlines, including a whale songline, that go through Barrow Island and offshore and connect Barrow Island to the mainland (Table 4-15).

Listening and talking with Country through stories, songlines, and other practices are ways First Nations care for, navigate, and connect with Country (Ref. 351). Songlines rely on the continued health of Country, and people's continued access and connection to it (Ref. 349). When Country is damaged or altered, so too are songlines and the knowledge they embody and enact (Ref. 349). Representatives from MCH described this as when songlines are disrupted, their *widdart* (heart) is disconnected (Table 4-15). No impact pathway to a change in access to Country from an unplanned interaction with marine fauna within the OA is anticipated. The consequence evaluation for marine fauna is provided above—if an interaction did occur, any impact would be to individuals, and is not expected to affect the overall population of the species. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from an unplanned interaction with marine fauna within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from an unplanned marine fauna interaction is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values 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 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 relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see 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

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.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
Petroleum activity schedule—Adjust to reduce likelihood of presence of EPBC	By altering the timing of the petroleum activity to reduce overlap with the predicted seasonal presence of protected	N/A

listed threatened and/or migratory species	marine fauna within the OA may consequently reduce the likelihood (and residual risk) of an unplanned interaction occurring. However, as shown in Table 4-14 activity during any month of the year will result in the overlap of with predicted presence of some protected marine fauna, and therefore avoidance of all seasonal sensitivities is not possible.	
Petroleum activity schedule—Adjust to avoid turtle nesting period	Green Turtles, Flatback Turtles, and to a lesser extent, Hawksbill Turtles, nest at Barrow Island (Ref. 254). The predicted peak nesting periods on Barrow Island are December to February, November to January, and October for Green, Flatback, and Hawksbill turtles respectively (Table 4-14). Green and Hawksbill turtles nest on the west coast of Barrow Island, while Flatback Turtles nest on the east coast (Ref. 254). While part of the OA does overlap with internesting buffer BIAs and internesting habitat critical to the survival of a species for the Flatback, Green and Hawksbill turtles, it is considered that internesting behaviour is likely to occur closer to shore and in shallower water depths than those within the OA (Sections 4.3.3.2.1, 4.3.3.2.2, and 4.3.3.2.3). The part of the OA that intersects with BIAs or habitat critical for survival for marine turtle species is associated with HVSC installation activities. Scheduling the petroleum activity to completely avoid the predicted peak turtle nesting season on Barrow Island would result in the petroleum activity coinciding with predicted peak periods for other marine fauna (e.g. migration for cetaceans, fledging of seabirds) (Table 4-14). Given the low number of vessels within the OA associated with the HVSC installation (and particularly within the OA nearest Barrow Island), and preferred types of internesting habitats for marine turtles being located outside of the OA, any change to the approximate activity schedule (Table 3-2) is not expected to result in a reduction of residual risk level.	The cost of implementing temporal schedule restrictions is considered grossly disproportionate to the negligible environmental benefit (and no change in residual risk) they may provide for marine turtles. Therefore, control measure has not been adopted for use.

Separation distances—Whale Sharks	The approximate activity schedule for vessel operations within the OA (Table 3-2) indicates overlap with the predicted use of the foraging BIA for Whale Sharks (July to November) (Table 4-14). As such, transient Whale Sharks may be present within the OA. The implementation of separation distances (30 m between a vessel and a Whale Shark)[31] and speed limits between vessels and Whale Sharks would decrease the risk of adverse physical interactions.	The detection of Whale Sharks within the vicinity of vessel operations may lead to increased survey duration and overall costs. However, the benefit of reducing impacts to Whale Sharks is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.
Separation distances—marine turtles	The approximate activity schedule for vessel operations within the OA (Table 3-2) coincides with the nesting and internesting periods of marine turtles on the NWS. In particular the temporal overlap occurs during the predicted peak nesting periods for Flatback Turtles (November to January), Green Turtles (December to February), and Hawksbill Turtles (October) on Barrow Island (Table 4-14). The part of the OA that intersects with BIAs or habitat critical for survival for marine turtle species is associated with HVSC installation activities. While part of the OA does overlap with internesting buffer BIAs and internesting habitat critical to the survival of a species for the Flatback, Green and Hawksbill turtles, it is considered that internesting behaviour is likely to occur closer to shore and in shallower water depths than those within the OA (Sections 4.3.3.2.1, 4.3.3.2.2, and 4.3.3.2.3). However, if marine turtles did occur within the OA, the use of separation distances (30 m between a vessel and a marine turtle) and vessel speed limits would decrease the risk of adverse physical interactions.	The detection of marine turtles within the vicinity of vessel operations may lead to increased survey duration and overall costs. However, the benefit of reducing impacts to marine turtles is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.
Bridge-watch marine fauna observations—Vessels under transit	The approximate activity schedule for vessel operations within the OA (Table 3-2) overlaps with the predicted peak Pygmy Blue Whale northern and southern migration (May to June, and November to December respectively), the predicted peak Humpback Whale northern and southern migration (late-July and early-September	No additional personnel costs. However, the detection of marine fauna may lead to increased activity duration and overall costs due to transit deviations (e.g. to maintain caution zones, no approach zones, or separation distances; or to avoid potential collision with observed marine fauna).

[31] The separation distance for Whale Sharks has been selected to be consistent with requirements within the Biodiversity Conservation Regulations 2018 (WA).

	respectively), the predicted peak nesting periods on Barrow Island for Green, Flatback, and Hawksbill turtles (December to February, November to January, and October respectively), and the predicted presence of Whale Sharks (July to November) (Table 4-14). In recognition of this temporal and spatial overlap, marine fauna observations from the bridge-watch crew on the vessels will be used while the vessels are in transit within the OA. These observations are not intended as a dedicated marine fauna observer (MFO) role, as bridge-watch crew will also be required to fulfil their primary responsibilities onboard the vessel. However, any observations will assist in reducing the risk of unplanned vessel strikes. The following will be implemented (irrespective of activity timing) while in transit within the OA: • where practicable (given primary crew duties), the bridge-watch from the vessel/s will record observations for marine fauna within their field-of-view • vessel to implement mitigation maneuvers (e.g. divert or slow) to avoid potential collision with any observed marine fauna (i.e. in addition to maintaining caution and no approach zones for cetaceans, and nominated separation distances for Whale Sharks, marine turtles, and Dugongs).	However, the benefit of reducing impacts to marine fauna is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.
Adaptive management—Pre start-up visual observations for marine turtles	The following adaptative measures will be implemented if HVSC installation activities occur within internesting habitat critical for the survival of marine turtles during the predicted peak nesting periods: • pre start-up visual observation period – during daylight hours, visual observations for the presence of marine turtles will be undertaken prior to commencement of the petroleum activity within the OA	No additional personnel costs. However, the detection of marine turtles may lead to increased activity duration and overall costs due to delayed start-ups of the activity. However, the benefit of reducing impacts to marine turtles is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.

<table>
<tr><td></td><td>– activity can only commence within the OA if no marine turtle has been observed within the field-of-view of the bridge-watch crew.</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 vessel activities within the scope of this EP, the slow-moving nature of vessels within the OA, and the limited spatial area of activities, the likelihood of a vessel collision with marine fauna is considered low. Based upon previous operating experience in the OA, CAPL considers that the likelihood of the consequence occurring is Seldom (3).</td></tr>
<tr><td>Risk level</td><td colspan="2">Low (8)</td></tr>
<tr><td colspan="3">Determination of acceptability</td></tr>
<tr><td>Principles of ESD</td><td colspan="2">The risks associated with this aspect are associated with unplanned interactions causing injury or death to individual marine fauna, 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>Relevant environmental legislation and other requirements</td><td colspan="2">Legislation and other requirements considered relevant for this aspect include:
EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans
Conservation Management Plan for the Blue Whale 2015–2025 (Ref. 60)
Conservation Advice Balaenoptera borealis Sei Whale (Ref. 59)
Conservation Advice Balaenoptera physalus Fin Whale (Ref. 58)
Conservation Advice Rhincodon typus Whale Shark (Ref. 57)
Recovery Plan for Marine Turtles in Australia (Ref. 56)
Approved Conservation Advice for Dermochelys coriacea (Leatherback Turtle) (Ref. 14)
Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) (Ref. 302)
Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake) (Ref. 303)
North-west Marine Parks Network Management Plan 2018 (Ref. 67)
National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna (Ref. 329)
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 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></td><td>Conservation Management Plan for the Blue Whale 2015–2025
Management action A.4.2: Ensure all vessel strike incidents are</td><td>Requirements to report vessel strike incidents is included in Section 8.4.2.
This section provides a risk evaluation for vessel strikes on Blue</td></tr>
</table>

	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	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.*
	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 8.4.2. 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 8.4.2. 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 petroleum activity is scheduled to occur from mid-2024 to mid-2026, and as such activities may overlap with the northward migration (July to November) period along the WA coast for Whale Sharks. The part of the OA that intersects with this Whale Shark BIA is associated with HVSC installation activities. The largest vessels associated with these scopes are the CLV and rock dumping vessel. 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.*
	Recovery Plan for Marine Turtles in Australia No specific management action identified.	N/A
	Approved Conservation Advice for Dermochelys coriacea (Leatherback Turtle) No specific conservation action identified.	N/A
	Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake)	N/A

<table>
<tr><td></td><td colspan="2">No specific conservation action identified.</td><td></td></tr>
<tr><td></td><td colspan="2">Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)
No specific conservation action identified.</td><td>N/A</td></tr>
<tr><td></td><td colspan="2">North-west Marine Parks Network Management Plan 2018
No specific zone rules identified.</td><td>N/A</td></tr>
<tr><td></td><td colspan="2">National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna
No specific action identified.</td><td>N/A</td></tr>
<tr><td>Internal context</td><td colspan="3">No CAPL management processes or procedures were deemed relevant for this aspect.</td></tr>
<tr><td>External context</td><td colspan="3">During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming:
intangible heritage, including songlines, 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.
No further objections or claims were raised regarding interaction with marine fauna arising from the activity.</td></tr>
<tr><td>Defined acceptable level</td><td colspan="3">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.
However, in alignment with Section 5.6.2, given that vessel strike 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. Objectives of the relevant documents are shown below:</td></tr>
<tr><td></td><td>Plan</td><td colspan="2">Objective</td></tr>
<tr><td></td><td>Conservation Management Plan for the Blue Whale 2015–2025</td><td colspan="2">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 colspan="2">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>
</table>

	North-west Marine Parks Network Management Plan 2018	As per Section 4.5.1.
	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 adverse change to the values of the Montebello Marine Park. 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.	
Environmental performance outcome	**Environmental performance standard**	**Measurement criteria**
No injury or mortality to marine fauna within the OA from vessel activities associated with the petroleum activity No adverse change to the values of Australian Marine Parks from the petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	**EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans** Vessels will implement caution and no approach zones, where practicable: • caution zone (300 m either side of whales; 150 m either side of dolphins)–vessels must operate at ≤6 knots within in 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.	Induction materials include relevant marine fauna caution and no approach zone requirements
		Training records confirm offshore personnel involved in the petroleum activity have completed the induction
		Vessel marine fauna sighting records show if marine fauna interaction occurred within caution or approach zones, and what mitigation (e.g. divert or slow vessel) measure was implemented
	Separation distances—Whale Sharks, marine turtles, and Dugongs Vessels will implement the following, where practicable: • a separation distance of 30 m from Whale Sharks and marine turtles • a separation distance of 100 m from Dugongs • vessels must operate at ≤6 knots when moving away to maintain these separation distances.	Induction materials include relevant marine fauna separation distance requirements
		Training records confirm personnel involved in offshore vessel activities have completed the induction
		Vessel marine fauna sighting records show if marine fauna interaction occurred within separation distance, and what mitigation (e.g. divert or slow vessel) measure was implemented

	Bridge-watch marine fauna observers—Vessels under transit When vessels are under transit within the OA: • where practicable (given primary crew duties), the bridge-watch from the vessel/s will record observations for marine fauna within their field-of-view • vessel to implement mitigation maneuvers (e.g. divert or slow) to avoid any potential collision with any observed marine fauna (i.e. in addition to maintaining caution and no approach zones for cetaceans, and nominated separation distances for Whale Sharks, marine turtles, and Dugongs).	Induction records show vessel bridge-watch crew were provided with marine fauna observations and reporting guidelines Records show that marine fauna observations were undertaken by bridge-watch crew when vessels are under transit within the OA Vessel marine fauna sighting records show if marine fauna were observed when vessel was under transit what mitigation (e.g. divert or slow vessel) measure was implemented
	Adaptive management—Pre start-up visual observation period for marine turtles If installation activities occur during the predicted peak nesting period for Flatback, Green, or Hawksbill turtles, and within internesting habitat critical for the survival of the respective species: • pre start-up visual observation period – during daylight hours, visual observations for the presence of marine turtles will be undertaken prior to commencement of the petroleum activity within the OA – activity can only commence within the OA if no marine turtle has been observed within the field-of-view of the bridge-watch crew.	Records demonstrate that pre start-up visual observations were undertaken for any installation activities within internesting habitat critical for the survival during predicted peak nesting periods for marine turtles.
	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	As required, records show that the MoC process was undertaken in response to any new information on

	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	cultural values or features within the OA or EMBA

7.3 Seabed disturbance

Source

Activities identified as having the potential to result in seabed disturbance are:

- installation—presence of the subsea infrastructure and subsea stabilisation (e.g. rock berms, concrete mattresses) within the OA, and the contingency temporary storage of mooring lines, or the HVSC
- IMR—as required by maintenance activities (e.g. span rectification)
- field support—contingency anchoring by vessels, wet parking of ROVs within the OA.

Potential impacts and risks

Impacts	C	Risks	C
Seabed disturbance may result in: • localised and temporary reduction in water quality • alteration of benthic communities and habitats	6 5	Seabed disturbance may result in: • changes to cultural heritage values	5

Consequence evaluation

Localised and temporary reduction in water quality

A reduction in water quality is expected to occur when sediment on the seabed is disturbed and becomes suspended in the water column when infrastructure or equipment is placed on the seabed, or during trenching. 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.

Both the Gorgon and Wheatstone projects have previously undertaken trenching and rock placement along parts of the Wheatstone Trunkline and the Gorgon and Jansz Feed Gas pipelines. Turbidity monitoring programs implemented during construction activities indicated plumes were highly localised and resulted in only short-term exposures (Ref. 97, Ref. 98, Ref. 99). In particular, turbidity monitoring during trenching for the Wheatstone Project indicated that a turbid plume may be evident up to ~70 m from the trench area, depending on environmental conditions (Ref. 97, Ref. 98). However, within two hours of ceasing trenching operations, the turbidity level had returned to background or very close to background level (Ref. 97, Ref. 98).

The nature and scale of the seabed disturbance for the petroleum activity covered by this EP is significantly smaller than that of the previous dredging and trenching campaigns, where water quality demonstrated rapid recovery after seabed disturbance. Therefore, turbidity resulting from the described activities is not expected to result in any significant environmental impacts.

Consequently, CAPL considers that the change in water quality from the activities covered in this EP is limited to a localised area immediately adjacent to the proposed activities and is expected to rapidly return to ambient conditions following completion of the activities; therefore, any impacts are Incidental (6).

Alteration of benthic communities and habitats

Benthic communities and habitats may be altered via physical disturbance or indirectly by the temporary increase in suspended sediment near the seabed as a result of the physical seabed disturbance.

The petroleum activity is expected to result in disturbance to the seabed within the vicinity of existing subsea infrastructure, with the exception of the mooring system for the FCS (the FCS is located ~7 km south-west of the existing Jansz MPTS). The area of benthic communities and habitat physically disturbed by the petroleum activity is confined to within the OA, with total disturbance footprint of ~1 km^2. The OA consists of an area of ~744 km^2. This indicative seabed disturbance area represents <0.13% of the OA.

As described in Section 4.3.1.1, benthic habitats within the OA mostly comprise unvegetated, soft, and unconsolidated sediments. Recent survey over parts of the Jansz pipeline showed the predominant benthic habitat was bare substrate, with either a smooth (mostly flat) or irregular (mostly flat with minor features) surface (Ref. 262). The only area identified as a high likelihood of biota being present was some patches over the scarp (Ref. 262).

The values and sensitivities within the OA with the potential to be impacted by seabed disturbance include the following KEFs:

- continental slope demersal fish communities
- ancient coastline at 125 m depth contour.

Although KEFs have been identified as having the potential to be exposed, any planned disturbance would be in close proximity of existing infrastructure (as the intersection between the KEFs and the OA occurs through the parts of the OA associated with the installation of HVSC, which is positioned broadly parallel of the existing Jansz umbilical; Figure 4-17). Recent surveys indicated that habitat within the ancient coastline at 125 m depth contour KEF in proximity to the OA consisted of smooth seabed with bioturbation and appeared devoid of biota (Ref. 262; Table 4-16). Similarly habitat within the continental slope demersal fish communities KEF in proximity to the OA comprise irregular and smooth seabed with bare substrates, discrete depressions of bare substrate, and scarps with bare substrate, were the most dominant benthic features (Ref. 262; Table 4-16).

As identified in Section 4.5.1, the OA overlaps with the Montebello Marine Park. The overlap between the marine park and the OA occurs at the shallower (typically <50 m) end of the OA, which has been characterised by sands, clays, or gravels overlying subcropping cemented sediments (Figure 4-2). The habitat within the shallower parts of the OA are expected to be predominantly unvegetated sand, with patches of seagrass and macroalgae, and no associated sessile biota (Section 4.3.1.1).

Impacts of increased turbidity on marine organisms as a result of dredging were extensively examined by CAPL during construction phases of the Gorgon and Wheatstone projects. Specifically, dredging for both projects and rock placement along the Wheatstone Trunkline and portions of the Gorgon and Jansz Feed Gas pipelines have been undertaken, and extensive monitoring programs were implemented that tracked changes in water quality and organism response. Both projects described alterations to water quality as a result of dredging (Ref. 96). However, neither project detected any significant impacts of dredging and altered water quality on coral assemblages (coral cover of whole assemblage), nor on non-coral assemblages including filter feeder (sponges cover etc.), macroalgae (cover), and seagrass (cover, seed, and shoot density). Turbidity monitoring programs implemented during construction activities indicated plumes were highly localised and resulted in only short-term exposures (Ref. 97, Ref. 98, Ref. 99). Post-installation monitoring indicated no changes to benthic habitats above natural variation (Ref. 99).

In addition, the physical presence of artificial structures on the seabed are known to provide hard substrate that can provide habitat for algae, fish, and invertebrates (Ref. 93; Ref. 94). Analysis of habitats on wellheads and associated infrastructure in water depths between 78–825 m on the NWS indicates that the presence of fish assemblages and invertebrate habitats were strongly influenced by depth, age and height of the structures (Ref. 95). Older, taller wellheads in depths <135 m possessed greater abundances of groupers, snappers, site-attached reef species, and transient pelagic fish species (Ref. 95).Beyond 350 m depth, the number of species and total fish abundance declined markedly, as did the percent cover of invertebrates (e.g. ascidians, black/octocorals, sponges) (Ref. 95). A review of ROV video footage recorded between 2015 and 2018 along the Jansz-Io pipeline in water depths ~737–1,348 m also indicated some spatial differences in assemblage between non-infrastructure and infrastructure sites, with greater overall abundances, species richness, and species diversity generally associated with infrastructure (Ref. 290). The review also indicated a decrease in richness, abundance, and diversity with depth as found in other studies both in the north-west of Western Australia and elsewhere (Ref. 290).Given the water depth of J-IC infrastructure ranges from ~25 m to ~1,350 m, the infrastructure may provide a hard substrate for colonisation over time, with a greater diversity and abundance of benthic invertebrates and fish assemblages within the shallower areas.

Given the nature of the receiving environment within the OA, ecosystem function or habitat connectivity is not expected to be affected by the planned seabed disturbance. The presence of subsea infrastructure is not expected to adversely impact the existing benthic communities and habitats, and in fact may lead to the establishment of additional benthic communities and habitats due to the introduction of hard substrates on an otherwise featureless seabed (i.e. a change, albeit not considered a negative change). As such, CAPL has ranked the consequence as Minor (5).

Changes to cultural heritage values

The J-IC infrastructure will predominantly be installed within proximity of existing infrastructure, however the disturbance footprint associated FCS mooring system is located southwest of existing infrastructure.

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6), and no protected UCH[32] sites or artefacts have been identified within the OA (Section 4.6.2). Therefore, no impacts to known protected seabed-based UCH (e.g. shipwrecks or archaeology), including First Nations UCH, are expected to occur.

Given known sea level history, part of the OA (i.e. areas in water depths of <125 m; activities within these water depths are associated with the installation of part of the HVSC) would have been emergent land during the extended history of First Nations occupation of Australia. Previous seafloor geomorphological analyses on the mid to outer shelf regions proximal to Barrow Island indicated that some (previously emergent) coastal landscape features represented significant geoheritage value (Ref. 310). 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, it is anticipated that tangible heritage features would not be significantly adversely affected from planned seabed disturbance within the OA.

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was the ocean (Table 4-15)—consequence evaluations to related receptors (i.e. marine environmental quality, benthic communities and habitats) are provided above.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

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, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from planned seabed disturbance within the OA.

Given the relatively small footprint associated with the petroleum activity (~1 km^2) and that it predominantly occurs within the vicinity of other existing infrastructure, a significant adverse change to cultural heritage values attributed to the offshore marine area from planned seabed disturbance is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as Minor (5).

ALARP decision context justification

Seabed disturbance from petroleum activities is common, with the activities causing this aspect regularly undertaken nationally and internationally. The control measures to manage the impacts associated with seabed disturbance are well understood and implemented by the industry.

During relevant persons consultation, claims regarding the potential presence of First Nations UCH (in the context of the UCH Act), and the risk of disruption to songlines were received. These

[32] 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”.

claims were responded to by CAPL (see summary in 'external context' below, and within appendix d). The impacts and risks associated with seabed 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	
Control measure	**Description**
Pre-lay survey	As described in Section 3, a pre-lay survey for key infrastructure locations (e.g. FCS moorings, HVSC route (or selected parts of the route), and mudmat/foundations for SCSt and SCMS) may be undertaken prior to installation works commencing. CAPL conducts pre-lay surveys to ensure that any uncertainty is mitigated before installing subsea infrastructure. These surveys detect obstructions such as emergent features, and where such obstructions are identified, the proposed installation location may be amended if practicable.
Marine Standard	Chevron's *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) 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.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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 finds protocol	In alignment with the draft *Guidelines for working in the near and offshore environment to protect Underwater Cultural Heritage* (Ref. 292) a UCH finds protocol will be implemented where there are activities interacting with the seabed with the risk of disturbing unlocated UCH. The purpose of the UCH finds protocol is to ensure that inadvertent discoveries of UCH (including First Nations UCH) are identified on site and responded to with adequate conservation and management actions. The

<table>
<tr><td></td><td colspan="2">protocol will identify actions to be taken should potential UCH be identified within the OA.</td></tr>
<tr><td colspan="3">Additional control measures and cost benefit analysis</td></tr>
<tr><td>Control measure</td><td>Benefit</td><td>Cost</td></tr>
<tr><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td colspan="3">Likelihood and risk level summary</td></tr>
<tr><td>Likelihood</td><td colspan="2">Due to the limited area of seabed disturbance, and with the control measures in place, the likelihood of impacts to cultural values from seabed disturbance is Rare (6).</td></tr>
<tr><td>Risk Level</td><td colspan="2">Very low (10)</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 localised short-term effects that are not expected to affect biological diversity and ecological integrity.
The impact associated with this aspect is Minor (5).
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 for this aspect include:
• North-west Marine Parks Network Management Plan 2018 (Ref. 67)
CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.</td></tr>
<tr><td>Requirement</td><td>Demonstration</td></tr>
<tr><td>North-west Marine Parks Network Management Plan
No specific zone rules identified.</td><td>N/A</td></tr>
<tr><td>Internal context</td><td colspan="2">These CAPL management processes or procedures were deemed relevant for this aspect:
• Marine Standard Non Tankers: Corporate OE Standard (Ref. 36).
Control measures related to the above management processes have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.</td></tr>
<tr><td>External context</td><td colspan="2">During relevant persons consultation, a claim regarding the potential presence of First Nations UCH sites within offshore Australian waters was received (appendix d). CAPL provided a response that confirmed that a desktop assessment for UCH has been undertaken which included consultation with First Nations to identify presence of UCH artefacts within the EMBA (see Section 4.6.2). Further, CAPL has also since included an adaptive management control measure for UCH sites/artefacts (described above) within the EP.
A claim regarding the risk of disruption to songlines was also received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation.
No further objections or claims were raised regarding seabed disturbance 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 considered lower-order impacts and risks 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 5.6.2, where the aspect is listed as threat to a protected matter, or identified as a concern to a listed</td></tr>
</table>

<table>
<tr><td></td><td colspan="2">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>North-west Marine Parks Network Management Plan 2018</td><td>As per Section 4.5.1</td></tr></table>Therefore, CAPL has defined the following acceptable level of impact such that it is not inconsistent with these documents:
• no adverse change to the values of the Montebello Marine Park.
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 Outcomes</th><th>Environmental performance standard</th><th>Measurement Criteria</th></tr>
<tr><td rowspan="5">Reduce the risk of impacts to sensitive environmental receptors within the OA from the petroleum activity

No adverse change to the values of Australian Marine Parks from the petroleum activity

No adverse change to First Nations cultural heritage values from the petroleum activity</td><td rowspan="2">Pre-lay survey
Where pre-lay surveys are undertaken, if emergent seabed features or obstacles are present, the proposed infrastructure will be repositioned if practicable</td><td>Pre-lay surveys verify no emergent seabed features or obstacles are present at proposed infrastructure locations</td></tr>
<tr><td>Records indicate that if emergent seabed features or obstacles are identified within the proposed infrastructure footprint during pre-lay surveys, the proposed infrastructure has been repositioned where practicable</td></tr>
<tr><td>Marine Standard
Vessel crew will meet the minimum competency requirements of the Chevron Marine Standard.</td><td>Records indicate that vessel crews meet the minimum competency requirements of the Chevron Marine Standard</td></tr>
<tr><td>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</td><td>Relevant persons consultation records</td></tr>
<tr><td>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</td><td>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</td></tr>
</table>

No impacts or risks to underwater cultural heritage from the petroleum activity	**Underwater cultural heritage** If ongoing consultation identifies the presence of, or potential for, First Nations UCH, then CAPL will undertake a MoC (Section 8.3.2.2) 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 finds protocol CAPL will develop and implement a UCH finds protocol to identify and manage any potential UCH during the petroleum activity	Records indicate that a UCH finds protocol was developed and in place prior to the commencement of 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 finds protocol 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 finds protocol Where required, UCH finds have been reported to the relevant agency (Table 8-14)	Record of lodgement of notification to relevant agency

7.4 Air emissions

Source

Activities identified as having the potential to result in air emissions:

- installation—combustion of diesel from the temporary generators (i.e. used until power supply via HVSC is available) on board the FCS
- field support—combustion of marine fuel from vessels, or aviation fuel from helicopters, within the OA during installation and pre-commissioning, or IMR activities.

Potential impacts and risks

Impacts	C	Risks	C
Generation of air emissions may result in:		Generation of air emissions may result in:	
• a localised and temporary reduction in air quality	6	• changes to cultural heritage values from atmospheric and direct GHG emissions	6
• contribution to the reduction of the global atmospheric carbon budget.	6	• changes to cultural heritage values from atmospheric and direct GHG emissions	–

Consequence evaluation
Localised and temporary reduction in air quality Atmospheric emissions will result in a decline in local air quality, within the immediate vicinity of the emissions source (i.e. vessels or FCS). The spatial extent and duration of this localised change in air quality will vary with emission volume and frequency. Atmospheric emissions generated during the combustion of fuels typically include sulfur oxides (SOx), nitrogen oxides (NOx), particulates, and volatile organic compounds (VOCs). SOx and particulate matter emissions are influenced by the fuel used and its relative sulfur content (e.g. MGO usually has a lower sulfur content than MDO or HFO). 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, it is considered appropriate to use these standards as the criteria for comparison. Air emissions dispersion modelling undertaken for the Wheatstone Platform demonstrated the concentrations of NOx, carbon monoxide, particulate matter, and VOCs are predicted to be well below NEPM AAQ standards indicating there was no significant degradation of ambient air quality (Ref. 267). Given the total volume of air emissions from an operational platform are expected to be much larger than those produced from vessels and diesel generators used during activities within scope of this EP, no significant degradation of the local air shed around the vessels of FCS is expected to occur. Therefore, CAPL has ranked the potential consequence to air quality as Incidental (6).
Contribution to the reduction of the atmospheric carbon budget (direct emissions) One of the main principles of greenhouse gas (GHG) accounting and reporting is relevance, of which an integral aspect is defining an appropriate GHG emissions inventory boundary (Ref. 268). CAPL has defined the emissions boundary for the assessment of direct GHG emissions in relation to the planned petroleum activity[33] within the OA as described in Section 3.1.1 of this EP. Any unplanned events, including emergency events, have been excluded from the emissions inventory. The following activities have been identified as direct emission sources for planned activities under this EP: • diesel fuel combustion by generators onboard the FCS • marine fuel combustion by vessels within the OA • aviation fuel combustion by helicopters activities within the OA. Any equipment (e.g. ROV, AUV) used to support vessel-based activities are powered by the vessel itself, and as such these don't represent an additional emission source to that already accounted for by the vessel. Based on the boundary and inventory described above, an estimate of direct GHG emissions from activities within this EP are estimated to be ~0.20 Mtpa CO_2-e. These direct emissions represent ~0.04% of national Australian annual emissions (based on a comparison to 2022 reported data) (Ref. 100). According to the Intergovernmental Panel on Climate Change (IPCC), Assessment Sixth Report for Working Group 1, "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%)."[34] 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 CO_2 could still be emitted while keeping warming below a specific temperature level."[35]

[33] Where 'petroleum activity' is as defined within regulation 4 of the OPGGS(E)R.

[34] IPCC, AR6, WG1, at TS-35.

[35] 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.[36].

If the total direct GHG emissions from activities associated with this EP are ~0.20 Mtpa CO2-e, then the activities under this EP may contribute ~0.1–0.4 x10 $^{-4}$ percent to the reduction in the total remaining global carbon budget, which is determined to be a *de minimis* decrease.

Due to the overall *de minimis* contribution to the reduction of the global carbon budget from the activities under this EP, the impact of contribution to the global carbon budget has been evaluated as having the potential to result in an Incidental (6) consequence.

Contribution to the reduction of the atmospheric carbon budget (indirect emissions)

To determine the relevance of indirect GHG 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'*. For the purposes of the assessment:

- the "primary action" is the activities covered by this EP, as described in Section 3
- the "secondary action" is the operation of the Gorgon Project, which is out of scope of this EP (Section 2.3)
- the "indirect consequence" is indirect GHG emissions.

Given that the purpose of installing the J-IC infrastructure is to maintain gas supply to the Gorgon GTP, CAPL has determined that the primary action (i.e. installation and pre-commissioning of J-IC infrastructure) therefore facilitates to a major extent the secondary action (i.e. the ongoing operation of the Gorgon Project, and specifically the Jansz-Io gas fields). As such, the following activities have been identified as indirect emission sources for planned activities under this EP:

- operational activities associated with the Gorgon hydrocarbon system
- gas processing at the GTP on Barrow Island
- transport and third party end-use of LNG, condensate and domestic gas products.

These indirect emissions for the activities under this EP comprise the direct and indirect emissions detailed in the NOPSEMA-accepted *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 7).

In accordance with regulation 56 of the OPGGS(E)R, as this information has been previously supplied for another purpose, and is publicly available[37] , the emissions inventory, impact and risk assessment, control measures, and acceptability assessment have not been repeated here.

Changes to cultural heritage values (atmospheric emissions and direct GHG emission)

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. Country is understood to also include Sky Country (Ref. 351). Consequence evaluations to related tangible environmental receptors (i.e. ambient air quality) are provided above. 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 recognize as part of their cultural heritage" (Ref. 348). Specific intangible values of Country identified through consultation included Dreamtime stories and songlines (Table 4-15) and the right to practice and revitalize their cultural traditions and customs. In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access or connection to Country from atmospheric or direct GHG emissions within the OA is anticipated. The consequence evaluations to ambient air quality and the reduction in atmospheric global carbon budget are provided above, and were assessed as having a localised and limited environmental impacts to air quality, and a *de minimis* contribution to the reduction of the global carbon budget. Further, as described in the above evaluation, the source of atmospheric and direct GHG emissions within the OA (i.e. vessels) is temporary and is not expected to affect the long-term air quality of the marine environment. As such, it is anticipated that intangible heritage values such as songlines, connection and access to

[36] IPCC, AR6, WG1, at SPM-29 Table SPM.2.

[37] The NOPSEMA-accepted *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* is available online at: https://info.nopsema.gov.au/activities/20/show_public. Section 6.5 presents the impact and risk assessment associated with GHG emissions.

Country would not be significantly adversely affected from atmospheric or direct GHG emissions within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from atmospheric or direct GHG emissions within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as Incidental (6).

Changes to cultural heritage values (indirect GHG emissions)

As described above, the installation (and subsequent operation) of J-IC infrastructure is linked to the ongoing operation of the Gorgon Project (specifically the Jansz-Io gas fields). The Gorgon Gas Development was considered to have a de minimis contribution reduction of the global carbon budget (Ref. 7).

The impact and risk assessment presented within the NOPSEMA-accepted *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* [Ref. 7]) describes changes to climate systems, and observed and potential impacts to values and sensitivies vulnerable to climate change (including MNES within Australian jurisdictions). In accordance with regulation 56 of the OPGGS(E)R, as this information has been previously supplied for another purpose, and is publicly available[37], the assessment has not been repeated here.

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. The accumulation of GHG emissions in the atmosphere is, in turn, influenced by global energy demand and the composition of the global energy mix.

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.

Although the Gorgon Gas Development cannot be directly linked to climate change impacts, the following contextual evaluation is provided.

First Nations values and sensitivities vulnerable to climate change

In addition to the potential impacts identified in the current revision[38] of the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 7), it has also been identified that “changes to Country due to climate change apply multiple pressures to Indigenous people” (Ref. 349). These pressures include those related to changes to seasons, flora, and fauna, and extreme events (Ref. 349). Changes to the seasonal timing of specific events (e.g. the timing in the fruiting or flowering of specific ‘calendar’ plants) can lead to a disconnect with the lifecycle stage of its culturally paired species, which can subsequently disrupt First Nations people seasonal understanding of optimal times to hunt, fish and gather resources throughout the year (Ref. 349). Seasonal changes can also influence saltwater intrusion into freshwater Country, which may have subsequent efftects on lifestyle or food sources (Ref. 348). Extreme events (e.g. sea level rise, temperature rises, bushfires, and droughts) are having subsequent impacts on First Nations peope including access to Country and its resources (Ref. 349).

Specific values identified through consultation also include the right to practice and revitalise their cultural traditions and customs as per Article 11 of the United Nations Declaration on the Rights of Indigenous Peoples (Ref. 354). This is also supported by key findings from the climate assessment within the 2021 State of the Environment (Ref. 355) report which stated:

- "Indigenous knowledge and culture will all be affected by rising temperatures and changing climate patterns”
- “Indigenous people are disproportionately affected by climate change in Australia because they use the environment differently, and the impacts are greater on their cultural knowledge and traditional practices. Impacts of climate change can displace them as a people away from their traditional lands, and can ultimately change the way they access and use Country to read climate”

[38] The *Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 7) is currently being revised to incorporate commissioning and operations of J-IC, and will be resubmitted to NOPSEMA for assessment.

- "Indigenous people read Country to understand climate and predict weather. Natural indicators in the environment tell Indigenous people when the rain is coming or delayed – for example, because a certain flower has not bloomed. When Country changes with climate change, traditional knowledge changes and Indigenous methodologies are forced to adapt".

Climate change may result in an impact pathway to a change in access and connection to Country, which may further affect the practice of cultural traditions and customs. However, as noted above, a contribution to the anthropogenic influence on the global climate system cannot be directly attributed to any one development, including the Gorgon Gas Development, and as such no consequence ranking has been assigned.

ALARP Decision Context Justification

Offshore commercial vessel operations and subsequent atmospheric 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 relevant persons consultation, claims regarding the risk of disruption to First Nations rights from continuing GHG contributions to climate change were received. These claims were responded to by CAPL (see summary in 'external context' below, and within appendix d).

The impacts 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

Control measure	Description
Reduced sulfur content fuel	Sulfur content of marine 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.
Marine Order 97—Marine pollution prevention—air pollution	Prior to commencement of the petroleum activity, Chevron's Offshore Vessel Information System (OVIS) assessment requirements within *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) are used to verify that all vessels will 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 NO_x emission levels will comply with regulation 13 of MARPOL 73/78 Annex VI.
Fuel consumption	The combustion of vessel fuels has been identified as the predominant source of direct GHG emissions associated with the petroleum activity within this EP. Consequently, vessel fuel usage will be monitored and recorded during the petroleum activity such that usage (and therefore associated GHG emissions) are managed to only those required to perform the petroleum activity.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.	
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 localised and temporary nature of air emissions within the OA, and with the control measures in place, the likelihood of impacts to cultural heritage values from air emissions is Rare (6).	
Risk level	Very low (10)	
Determination of acceptability		
Principles of ESD	The impact and risk associated with atmospheric emissions is a temporary reduction in air quality to a localised area and a change in cultural heritage values respectively, which are not considered to have the potential to affect biological diversity and ecological integrity. The consequence associated with these impacts and risks is Incidental (6). The impact and risk associated with direct GHG emissions is a *de minimis* contribution to the reduction of the global carbon budget and a change in cultural heritage values respectively, which are not considered to have the potential to affect biological diversity and ecological integrity, or intergenerational equity. The consequence associated with these impacts and risks is Incidental (6). The risk associated with indirect GHG emissions (i.e. those associated with the Gorgon Gas Development) is a change in cultural heritage values. The principle of inter-generational equity is considered to be met for the Gorgon Gas Development. 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. 356). Natural gas provides both a reliable and affordable energy source and is one of the lower emission fossil fuels. GHG emissions from the Gorgon Gas Development are managed under EP Act (WA) approvals and associated conditions, including the requirement for Scope 1 net emissions to be reduced to net zero by 2050, together with 5-yearly reduction targets commencing in 2030. By not materially or substantially contributing to Australia's GHG emissions, the Gorgon Gas Development will support 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 below 2°C above pre-industrial levels and reduce the risks and impacts of climate change. Through supporting Australian and global efforts to manage GHG emissions (including Paris Agreement targets) and associated risks and impacts of climate change, the risks of adverse impacts to access and connection to Country are managed thereby mitigating adverse risks to the rights of First Nations people to practice and revitalise their cultural traditions and customs (as per Article 11 of the United Nations Declaration on the Rights of Indigenous People; Ref. 354). The principle of intergenerational equity is considered to be met because the Gorgon Gas Development is consistent with Australia's carbon budget and therefore Australia's efforts to keep warming to the Paris Agreement target of below 2°C above pre-industrial levels and reduce the risks and impacts of climate change, thereby ensuring that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. Therefore, no further evaluation against the Principles of ESD is required.	

<table>
<tr><td>Relevant environmental legislation and other requirements</td><td>Legislation and other requirements considered relevant to this aspect include:
Marine Order 97
MARPOL 73/78
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 97
Gives effect to Annex VI of MARPOL 73/78</td><td>Prescribed limits (as per Division 7) for sulfur content of fuel oil have been incorporated into the reduced sulfur content fuel control measure
IAPP and IEE certificate (as per Division 2), SEEMP (as per Division 6), and nitrogen oxides emission requirements (as per Division 3) have been incorporated into the Marine Order 97—Marine pollution prevention—air pollution control measure</td></tr></table></td></tr>
<tr><td>Internal context</td><td>These CAPL management processes or or procedures were deemed relevant for this aspect:
Marine Standard Non Tankers: Corporate OE Standard (Ref. 36).
Control measures related to the above management processes or procedures have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.</td></tr>
<tr><td>External context</td><td>During relevant persons consultation, a claim relating to GHG emissions from the Gorgon Gas Development regarding the risk to rights of First Nations peoples, including the right to practice and revitalize cultural traditions and customs was received (appendix d). CAPL responded confirming:
the J-IC Installation EP (i.e. this EP) only assesses Scope 1 GHG emissions from the installation works[39]
GHG emissions associated with the Gorgon Gas Development have been assessed in the NOPSEMA-accepted Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan (Ref. 7)
it was also noted that the Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan will be revised to incorporate the operation of the J-IC infrastructure and consultation is planned to be undertaken on this EP revision in 2024
GHG conditions for the Gorgon Gas Development require Scope 1 net emissions to be reduced to net zero by 2050, together with 5-yearly reduction targets commencing in 2030, via the approvals granted under the Environmental Protection Act 1986 (WA).
A claim regarding the risk of disruption to songlines was also received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation.
No further objections or claims were raised regarding air emissions arising from the activity.</td></tr>
</table>

[39] Scope 1 emissions in this context refers to the direct emissions produced by activities cover under this EP.

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 evaluated for this aspect are not inconsistent with any relevant recovery or conservation management plan, conservation advice, or bioregional plan.	
Environmental performance outcomes	**Environmental performance standard**	**Measurement criteria**
Planned air emissions from the petroleum activity will meet Marine Order 97 requirements Direct GHG emissions will be managed to ensure only those necessary to perform the petroleum activity are generated	**Reduced sulfur content fuel** Only low-sulfur (0.50 mass % concentration [m/m]) fuel oil will be used to minimise SO_x emissions	Bunker receipts verify the use of low-sulfur fuel oil
	Marine Order 97—Marine pollution prevention—air pollution Prior to commencement of activities, the following will be verified: • vessels will hold a valid IAPP certificate and a current IEE certificate • all vessels (as appropriate to vessel class) will have a 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
	Fuel combustion Vessel fuel usage will be recorded during the petroleum activity	Records confirm vessel fuel usage during the petroleum activity
No adverse change to First Nations 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

7.5 Light emissions

Source

Activities identified as having the potential to result in light emissions include:

- installation— navigation and operational lighting from the of FCS
- field support—navigation and operational lighting from vessels during the petroleum activity (including installation and pre-commissioning, or IMR activities) within the OA.

Potential impacts and risks

Impacts	C	Risks	C
Light emissions may result in: • localised change in ambient light.	6	A change in ambient light levels may result in: • change in fauna behaviour for light-sensitive species. • changes to cultural heritage values	5 6

Consequence evaluation

Localised change in ambient light

Vessels will be present within the OA during all activities, including installation and pre-commissioning, and IMR. The duration of vessel presence will vary with activity, ranging from ~2 days (each rock dumping trip) to ~5–6 months for SCSt installation campaigns. 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.

Similarly lighting will be required on the FCS to maintain safe navigation for other marine users, as well as operational lighting during installation and pre-commissioning activities. The lighting required during hook-up and pre-commissioning for safe operations will be greater than during normal unmanned operations. The duration of manned activities under this EP are estimated at ~8 weeks for installation (Section 3.2.1.6), and ~8 weeks for pre-commissioning (Section 3.3.1).

Monitoring undertaken by Woodside (Ref. 68) indicates that light density from lighting on a drill rig attenuated to below 1.00 lux and 0.03 lux at distances of ~300 m and ~1.4 km, respectively. Light densities of 1.00 lux and 0.03 lux are comparable to natural light densities experienced during deep twilight and during a quarter moon.

Previous modelling of light emissions from a pipelay vessel indicated that at distances ~1.8–5.7 km from the pipelay vessel, light may be visible, but is not expected to be biologically relevant and result in behavioural impacts (Ref. 269).

Lighting is expected to be similar or less on the FCS and installation vessels compared to a drill rig and/or pipelay vessel, therefore the use of previous monitoring (Ref. 68) and modelling is considered a conservative appropriate to inform this consequence evaluation.

Based on previous light monitoring and modelling (Ref. 68; Ref. 269), CAPL expects that its activities will result in changes to ambient light conditions in the order of kilometres from the emission sources. While the vessels will be a temporary light source (of varying duration), the FCS will be become a permanent light source offshore. However, during normal unmanned operations, the lighting on the FCS will predominantly be for safe navigation purposes and the associated exposure footprint is expected to be smaller than during lit conditions for operations (e.g. during installation, pre-commissioning, commissioning, and start-up). Therefore, the impacts associated with a direct change in ambient light levels were determined to be Incidental (6).

Concurrent activities

As identified in Table 3-2 and discussed in Section 3.5.1.1, there is the potential for more than one vessel to be operating within the OA. When there is more than one vessel present within the OA, the vessels may not always in close proximity to each other (i.e. the spatial areas exposed to artificial light from vessels would not overlap), or where they are in proximity, the activity overlap would occur for a limited duration (e.g. ~2–90 days).

For the purposes of risk assessment, the longest duration of potential concurrent activities in proximity to each other would occur during the installation of the SCSt process modules, SCMS, and sliding spools. In this scenario, a HLV and LCV vessel will be within close proximity to each within the Jansz field (around the Jansz MPTS) for ~90 days. A HTV will also be on site during this scope, but presence of this vessel will be intermittent during this period as it transfers J-IC assets between port and site for installation. The installation site for the SCSt is ~110 km and ~130 km offshore from Montebello Islands and Barrow Island respectively. Light emissions from the adjacent vessels would

result in a slightly greater spatial area being exposed, as well as cumulative emissions in the area between the two vessels (noting that light intensity is inversely proportional to the distance from the source, and therefore the overlap in emissions is not occurring for the highest light intensities).

Similarly, for the purposes of risk assessment, the greatest number of vessels within the OA at any one time would occur if installation activities for the FCS, SCSt and HVSC occurred concurrently (Section 3.5.1.1; Table 3-1). In this scenario, the duration could be up to ~60 days (based on the installation of the FCS and mooring lines scope). However, given the locations of the concurrent activities, there is no predicted spatial overlap in measurable change in ambient light from each of the individual installation scopes—for example, the FCS and SCSt are ~7.5 km away from each other, while light from both sets of vessel activities may be visible, a measurable change in ambient light is predicted to be within ~1.8 km of a vessel, and therefore no overlap would occur.

No spatial overlap in vessel light emissions are expected to occur close to Barrow Island. If the trenching vessel and rock dumping vessel were both operating at KP 99.6 at the same time, this would only occur for hours, given that the trenching vessel would be transiting along the HVSC route. KP 99.6 is located along the HVSC route, ~28 km from Barrow Island, in ~62 m water depth.

Given the limited extent of the change arising from concurrent vessel lighting, the impacts associated with a direct change in ambient light levels was determined to be Incidental (6).

Change in fauna behaviour for light-sensitive species

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 4.3.3, 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 habitat critical to the survival of a species also overlap with the OA, including:

- Fairy Tern, Lesser Crested Tern, Roseate Tern, Wedge-tailed Shearwater (breeding BIAs)
- Whale Shark (foraging BIA)
- Flatback Turtle, Green Turtle, Hawksbill Turtle (internesting buffer BIA, and internesting habitat critical to the survival of a species).

A spawning ground for the EPBC Act listed conservation dependent Southern Bluefin Tuna also intersects with the OA (Section 4.4.1.1).

The *National Light Pollution Guidelines* (Ref. 13) 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. 70; Ref. 71) and fledgling seabirds grounded in response to artificial light 15 km away (Ref. 72).

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. 73) and that lighting can attract birds from large catchment areas (Ref. 74).

Anthropogenic disturbance (including artificial lighting) is identified as a threat within the *Wildlife Conservation Plan for Migratory Shorebirds* (Ref. 76), and light pollution is identified as a threat within the *Wildlife Conservation Plan for Seabirds* (Ref. 237). It is possible that nocturnally active seabirds and/or migratory shorebirds may be affected by light-spill and make alterations to their normal behaviours. It is suggested that procellariforms (shearwaters, petrels and albatross) species that forage at night are instinctively attracted to light because they exploit bioluminescent prey (Ref. 270; Ref. 74). The mechanism of birds being attracted to light is not proven, but it is proposed that the artificial lighting may override the internal magnetic compass of migratory shorebirds or nocturnal seabirds (Ref. 271). However, Marquenie (Ref. 272) estimated that a change in migratory behaviour of birds was limited to <5 km from the source. Further, previous light modelling (Ref. 269_ of a pipelay installation vessel predicts that light emissions are expected to be visible, but not be biologically relevant or result in behavioural impacts at distances >1.8 km from a vessel. Therefore, this type of impact is expected to be spatially restricted to the immediate vicinity of the vessel/s or FCS and affect only individuals (rather than populations). The seabirds with BIAs that intersect with the OA do not intersect with the offshore extent of the OA associated with the installation and pre-commissioning of the SCSt or FCS.

Fledglings are considered more vulnerable to artificial light than adults for several factors, including immature development of ganglions in the eyes, disturbance to sea-finding cues, and potential connection between light and food (Ref. 237). At its closest, the OA is located ~5.5 km from the coast of Barrow Island (i.e. the 3 nm coastal waters limit). The part of the OA that occurs near Barrow Island is associated with the installation of the HVSC. As light emissions are expected to be visible, but not be biologically relevant or result in behavioural impacts at distances >1.8 km from a vessel, no coastal areas (and therefore fledgling seabirds) are expected to be exposed. In addition, the duration of activities occurring within this part of the OA closest to Barrow Island is expected to be

relatively low, with vessels typically moving along the HVSC route and away from the island, and not remaining stationary for extended durations.

The Recovery Plan for Marine Turtles in Australia (Ref. 56) identifies light emissions as a key threat because it can disrupt critical behaviours, such as nesting, hatchling orientation, sea finding, and hatchling dispersal behaviour.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 56) defines the nesting habitat critical for the survival of each species at a stock level. The closest nesting habitat critical to the survival of a species to the OA include Barrow, Montebello, and Lowendal islands, which have been identified as nesting habitat for Flatbacks, Greens, and/or Hawksbill turtles (Ref. 56). At its closest, the OA is located ~5.5 km from the coast of Barrow Island (i.e. the 3 nm coastal waters limit). The part of the OA that occurs near Barrow Island is associated with the installation of the HVSC. As light emissions are expected to be visible, but not be biologically relevant or result in behavioural impacts at distances >1.8 km from a vessel, no coastal areas (and therefore no adult nesting turtles, or turtle hatchlings) are expected to be exposed. In addition, the duration of activities occurring within this part of the OA closest to Barrow Island is expected to be relatively low, with vessels typically moving along the HVSC route and away from the island, and not remaining stationary for extended durations.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 56) defines internesting habitat critical for survival of a species as a distance seaward from nesting habitat critical for the survival of a species of 60 km for Flatbacks and 20 km for Green and Hawksbill turtles. Recent studies (Ref. 75) have indicated that the internesting behaviour of Flatback Turtles on the NWS appears more spatially restricted than that suggested by the Recovery Plan (Ref. 56). Whittock et al (Ref. 75) reported that Flatback Turtles prefer habitats within proximity of the coast and at relatively shallow depths during their internesting periods. Unsuitable Flatback Turtle internesting habitat was defined as waters >25 m deep and >27 km from the coast (Ref. 75). This suggests that although the OA does overlap with some internesting habitat critical for the survival of the species, due to the OA being located offshore in water depths ranging between ~25–1,350 m, and that Flatback Turtle nesting is more common on the east coast beaches of Barrow Island (i.e. opposite side of the island to the OA), the majority of the OA may not present preferred internesting habitat for this species. Green and Hawksbill turtles have also demonstrated spatially restricted behaviour during internesting, and have been recorded as staying with within 5 km of Barrow Island and within shallow coastal waters (Ref. 200). Consequently, given observed behaviours and internesting habitat preferences, only a small number of marine turtles are expected to be present within the OA, and any disruption to their behaviour is expected to be spatially limited as light emissions are not expected to be biologically relevant or result in behavioural impacts at distances >1.8 km from a vessel. In addition, the duration of activities occurring within this part of the OA closest to Barrow Island is expected to be relatively low, with vessels typically moving along the HVSC route and away from the island, and not remaining stationary for extended durations.

Artificial light may result in varied ecological changes to fish, including changes to predatory behaviour and abundance (Ref. 273, Ref. 274), altering hatching success (Ref. 275), acting as an attractant for plankton (Ref. 276), or altering circadian behavioural rhythms (Ref. 274).

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. 57). Given the timing for the project (mid-2024 to mid-2026), the presence of Whale Sharks within this foraging BIA may coincide with vessel-based activity (Table 4-14). The part of the OA that occurs near Barrow Island is associated with the installation of the HVSC, and as such vessels are expected to be moving along the HVSC route and, and not remaining stationary for extended durations. The OA associated with the installation and pre-commissioning of the FCS and SCSt does not intersect with the Whale Shark BIA. Light has also not been identified as a key threat for the Whale Shark (Ref. 57).

The approximate spawning ground for Southern Bluefin Tuna extends between Java and northern WA, covering an area of ~1,850,534 km^2. Two peaks have been observed in Southern Bluefin Tuna spawning activity: September–October and February–March (Ref. 338; Ref. 339).The part of the OA (areas of overlap is ~152 km^2 [0.008%]) that intersects with this spawning ground is predominantly associated with the installation of the FCS and SCSt. Light has not been identified as a threat within the Listing Advice on Southern Bluefin Tuna (Ref. 344).

Cetaceans predominantly use acoustic senses rather than visual sources to monitor their environment (Ref. 69), so light is not considered to be a significant factor in cetacean behaviour or survival.

The EPBC listed (migratory) Dugong may have an intermittent and transitory presence within the OA. Artificial light has not been identified as a pressure within the NWMR for this species (Ref. 331).

The EPBC threatened Short-nosed Seasnake or Leaf-scaled Seasnake are not expected to be present within the OA given known habitat preferences for shallow water and reef habitat; light has

also not been identified as a threat for either species (Ref. 302; Ref. 303). While other EPBC marine listed seasnake species may occur in broader habitats within the NWMR, snakes are inactive at night (Ref. 332). As such, light is not considered to be a significant factor in seasnake behaviour or survival.

Given that light emissions have the potential to cause localised and temporary impacts to individuals over the course of the petroleum activity, CAPL has ranked the consequence associated this impact as Minor (5).

Concurrent activities

As described above, potential for concurrent activities that would result in an overlapping (and larger) exposure area than the ~1.8 km predicted extent from each individual vessel would occur >100 km offshore from Barrow Island around the proposed locations of the SCSt and FCS. Activities at these areas may coincide with when Australian Fairy Terns, Lesser Crested Terns, Roseate Terns, and Wedge-tailed Shearwaters may be breeding in the Pilbara (Table 4-14). Barrow Island and other offshore islands (i.e. the nesting and nearshore foraging habitats identified as BIAs for EPBC listed species) are >20 km away from light emissions from vessels associated with installation activities for the FCS or SCSt, and as such are beyond the precautionary buffer or exposure area identified in the *National Light Pollution Guidelines* (Ref. 13). The seabirds with BIAs that intersect with the OA do not intersect with the offshore extent of the OA associated with the installation and pre-commissioning of the SCSt or FCS. As such impacts to seabird nesting, nearshore foraging, or fledglings are not expected from concurrent vessel activities.

While the exposure area associated with vessels working concurrently at the FCS of SCSt locations would increase, it is not a significant spatial increase given the close proximity of operations (e.g. if single vessel has a ~3.6 km diameter biologically relevant light exposure area, then two vessels within ~0.5 km of each other, could create up to a ~4.1 km diameter exposure area).

No spatial overlap in vessel light emissions are expected to occur close to Barrow Island. If the trenching vessel and rock dumping vessel were both operating at KP 99.6 at the same time, this would only occur for hours, given that the trenching vessel would be transiting along the HVCS route. KP 99.6 is located along the HVSC, ~28 km from Barrow Island, in ~62 m water depth; which is both further offshore and in deeper waters than preferred internesting habitats for Flatback, Green, or Hawksbill turtles.

For concurrent vessel activities not occurring within proximity of each other, multiple individual biologically relevant light exposure areas may occur. Given the small (~1.8 km) distances from each individual vessels where light emissions may be biologically relevant or result in behavioural impacts, and the location of the different activities within the broader extent of the OA (~130 km in length), the cumulative impact of multiple exposure areas is not expected to significantly adversely affect the biological behaviours of seabirds or migratory shorebirds in the OA.

Potential concurrent vessel activities, and as such concurrent light emissions from vessels, have the potential to cause localised and temporary impacts to a individuals over the course of the petroleum activity, CAPL has ranked the consequence associated this impact as Minor (5).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was marine fauna (e.g. whales, dugongs, turtles; Table 4-15). Consequence evaluations to these tangible environmental receptors (i.e. marine fauna) are provided above.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives of from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from artificial light emissions within the OA is anticipated. The consequence evaluation to marine fauna are provided above, and were assessed as localised and minor environmental impacts that are not expected to affect the overall population of the species. Further, as described in the above evaluations, the source of light emissions within the OA (i.e. vessels) is temporary and is not expected to affect the long-term ambient light of the marine environment. As such, it is anticipated that intangible heritage values such as songlines and

connection to Country would not be significantly adversely affected from light emissions within the OA

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from artificial light emissions within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as Incidental (6).

ALARP decision context justification

Offshore platform and commercial vessel operations and subsequent light emissions arising from these activities are commonplace in offshore environments nationally and internationally.

During relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in 'external context' below, and within appendix d).

The impacts and risks associated with light emissions are well understood, and considered to be 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

Control measure	Description
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.
Light management	The indicative schedule for the J-IC installation and pre-commissioning activities is from mid-2024 to mid-2026. Depending on activity-specific timing, activities may overlap with the predicted turtle nesting seasons, or seabird breeding seasons. As a conservative management measure, vessels working at night will be required to reduce external lighting to the minimum required for safe operations (and where practicable have this lighting directed downwards). The vessels will also make use of window coverings (e.g. blinds) during night operations to shield internal lights from view. The OA is located ~5.5 km from the nearest coast (Barrow Island) and as such, no measurable change in light from the vessels will occur at coastal locations. Table 5, Table 8, and Table 11 within the *National Light Pollution Guidelines for Wildlife* (Ref. 13) provides a toolbox of light management options for marine turtles, seabirds, and migratory shorebirds respectively, that may be relevant for consideration depending on the activity. This control measure is consistent with the following light management options as identified within the *National Light Pollution Guidelines for Wildlife* (Ref. 13) for marine turtles, seabirds, and migratory shorebirds: • implement light management actions during nesting and hatchling (marine turtles), breeding (seabirds), or peak migration (migratory shorebirds) periods • aim lights downwards and direct them away from nesting areas (marine turtles, seabirds) • reduce unnecessary lighting at sea by restricting external lighting to the minimum required for safe operations and navigation, and using window blinds to shield internal lights.
Activity-specific Hazard Identification and Risk Assessment (HIRA)—marine turtles	Where the petroleum activity is required to be undertaken at night within habitat critical to the survival of a marine turtle species and during predicted peak nesting periods (Table 4-14), 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:

	• risk-based inspections of vessels will be undertaken before mobilisation to identify potential strategies to reduce artificial light spill from vessels • if marine turtles are sighted near the path of a vessel, vessels will divert to avoid them (if safe to do so), or slow down to idling speed • vessels working at night within critical habitat and during turtle season will be required to reduce lighting to the minimum required for safe operations. 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 8.3.2.2).
Seabird management procedure	The indicative schedule for the Gorgon umbilical works (late-2023 to mid-2024) overlaps with predicted seabird breeding seasons and/or peak fledging periods (Table 4-14). A Seabird Management Procedure has been developed, and will be implemented for vessel-based petroleum activities occurring at night. The procedure is based on the *International Association of Antarctica Tour Operators (IAATO) Guidelines to Minimize Seabirds Landing on Ships* (IAATO Information Paper 24 (Ref. 333) and includes: • an overview of key species • management procedures for any seabird landings on vessels. Implementation of a seabird management procedure is aligned with a proposed management option (Table 8) from the *National Light Pollution Guidelines for Wildlife* (Ref. 13).
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
External vessel lighting to use: • flashing or intermittent lights instead of fixed beam • motion sensors to turn on lights only when needed • luminaires with spectral content appropriate for the species present • avoid high intensity light of any colour.	Replacing external lighting on vessels with lighting that is flashing, intermittent, or motion triggered, or of a particular spectral signature and/or intensity, may have the potential to further reduce the impact of artificial light on marine fauna. Light emissions from vessels are not expected to be biologically relevant or result in behavioural impacts at distances >1.8 km from a vessel; and at its closest, the OA is located ~5.5 km from any coast and potential nesting area. The implementation of these additional light management controls are considered to be of limited environmental benefit, and would not result in a reduction of residual risk.	The cost of retrofitting external lighting of the vessels is considered grossly disproportionate to the limited environmental benefit (and no change in residual risk) they may provide for marine fauna. Therefore, this control measure has not been adopted for use.

Use curfews to manage lighting	The *National Light Pollution Guidelines* (Ref. 13) suggests the use of curfews may assist in managing artificial lighting around nesting beaches (marine turtles), rookeries during fledgling period (seabirds), or near nocturnal foraging and roosting areas in coastal habitats (migratory seabirds). One of the mechanisms for implementing this is the use of motion sensors—this has been considered in the above control measure, and is not repeated here. Other mitigation options refer to the user of timers to extinguish lighting around turtle nesting beaches after 8 pm, or near seabird or migratory shorebird rookeries after 7 pm. The intent of the curfews is to manage artificial light in coastal areas to minimise any disruption to biological important behaviours. Given that light emissions from vessels are not expected to be biologically relevant or result in behavioural impacts at distances >1.8 km from a vessel, and at its closest, the OA is located ~5.5 km from any coast, the implementation of curfews are considered to be of limited environmental benefit, and would not result in a reduction of residual risk.	The cost of implementing lighting curfews, either by retrofitting external lighting with motion sensors (as considered above), or by implementing restricted night operations (e.g., no operations after 7 pm or 8 pm) is considered grossly disproportionate to the limited environmental benefit (and no change in residual risk) they may provide for marine fauna. Therefore, control measure has not been adopted for use.
Petroleum activity schedule—Adjust to avoid seabird breeding periods	Seabird species with BIAs that intersect with the OA are known to nest on islands within the vicinity (e.g. Montebello Islands, Double Island) (Sections 4.3.3.4.1, 4.3.3.4.2, 4.3.3.4.3). The predicted breeding periods for the Australian Fairy Tern, Lesser Crested Tern, Roseate Tern, and Wedge-tailed Shearwater collectively cover all months of the year (Table 4-14). As such, scheduling the petroleum activity to avoid the breeding period for all seabirds is not possible.	N/A
Petroleum activity schedule—Adjust to avoid predicted fledging period for Wedge-tailed Shearwaters	Wedge-tailed Shearwaters typically depart their WA colonies in early-April to early-May (Section 4.3.3.4.3, Table 4-14). The nearest known nesting colony is Double Island, ~15 km from the OA and on the opposite side (east coast) of Barrow Island. Based on the approximate activity schedule (Table 3-2), the only potential activities occurring within April/May period and within proximity	The cost of implementing temporal schedule restrictions is considered grossly disproportionate to the limited environmental benefit (and no change in residual risk) they may provide for Wedge-tailed Shearwaters. Therefore, control measure has not been adopted for use.

	to Barrow Island may be rock dumping and post-lay survey. Neither of these activities would have a vessel remaining within the area for extended durations (e.g. each rock dumping trip is only ~2 days within the OA, and a post-lay survey would have the vessel moving along the HVSC route). Given the location of the breeding colony on Double Island, the lighting from the installation vessels is unlikely to be visible from this island, or substantially contribute to existing skyglow from operating facilities on Barrow Island. As such, scheduling the petroleum activity to avoid the predicted fledging period for Wedge-tailed Shearwaters is considered to be of limited environmental benefit, and would not result in a reduction of residual risk.	
Likelihood and risk level summary		
Likelihood	Due to the nature and scale of this petroleum activity, including that vessel-based activities located closer to the coast are relatively short and discrete campaigns, and that the longer duration FCS and SCSt installation scopes are located >100 km from the nearest coast, 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 risk associated with this aspect is disruption to light-sensitive species behaviour, which given temporary nature of activities within shallow waters with broader activities occurring offshore, is not considered as having the potential to affect biological diversity and ecological integrity. The impact 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: • *Navigation Act 2012* (Cth) • *National Light Pollution Guidelines* (Ref. 13) • *Recovery Plan for Marine Turtles in Australia* (Ref. 56) • *Wildlife Conservation Plan for Migratory Shorebirds* (Ref. 76) • *Wildlife Conservation Plan for Seabirds* (Ref. 237) • *Conservation Advice Rhincodon typus Whale Shark* (Ref. 57) • Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) (Ref. 302) • *Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)* (Ref. 303) • *North-west Marine Parks Network Management Plan 2018* (Ref. 67) CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.	
	Requirement	**Demonstration**
	Navigation Act 2012 (Cth) Use of lights and signals as per COLREGS and Marine Order 30	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.
	National Light Pollution Guidelines Undertake an environmental impact assessment	This section provides an impact assessment for artificial light exposure from the petroleum activity (including where concurrent activities may result in cumulative effects) and consideration of control measures as identified within the mitigation toolboxes for marine turtles, seabirds, and migratory shorebirds.
	Recovery Plan for Marine Turtles in Australia Management action A8.1: 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 Management action A8.3: Identify the cumulative impact on turtles from multiple sources of onshore and offshore light pollution	Exposure areas from light emissions from vessel activities (including any potential cumulative effects from concurrent activities), and any associated impacts or risks, have been described in the above consequence evaluation. The control measures identified above are considered appropriate to manage the risk to marine turtles to ALARP. Given the unsuitability of the majority of the OA as internesting habitat, the extent of changes to ambient light exposures does not overlap with any nesting areas, and the control measures in place, the activity is not considered to be inconsistent with the *Recovery Plan for Marine Turtles in Australia.*
	Wildlife Conservation Plan for Migratory Shorebirds No specific action identified.	N/A
	Wildlife Conservation Plan for Seabirds No specific action identified.	N/A
	Conservation Advice Rhincodon typus Whale Shark Conservation action: Assess the impacts of offshore installations and associated environmental changes (light spill, chronic noise, changed water temperature, localised nutrient levels) on whale sharks and mitigation options for these impacts	This section provides an impact assessment and consideration of control measures for vessel light spill. Therefore, this activity is not considered to be inconsistent with the *Conservation Advice Rhincodon typus Whale Shark.*
	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
	North-west Marine Parks Network Management Plan No specific zone rules identified.	N/A

<table>
<tr><td>Internal context</td><td>No CAPL management processes or procedures were deemed relevant for this aspect.</td></tr>
<tr><td>External context</td><td>During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming:
intangible heritage, including songlines, 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.
No further objections or claims were raised regarding light emissions arising from the petroleum activity.</td></tr>
<tr><td>Defined acceptable level</td><td>These impacts and risks are inherently acceptable as they are considered lower-order impacts and risks 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 5.6.2, 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>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>Wildlife Conservation Plan for Migratory Shorebirds</td><td>Objective 1: Protection of important habitats for migratory shorebirds has occurred throughout the East Asian-Australasian Flyway (EAAF)
Objective 3: Anthropogenic threats to migratory shorebirds in Australia are minimised or, where possible, eliminated.</td></tr>
<tr><td>Wildlife Conservation Plan for Seabirds</td><td>Objective 2: Seabirds and their habitats are identified, protected and managed in Australia.</td></tr>
<tr><td>North-west Marine Parks Network Management Plan 2018</td><td>As per Section 4.5.1.</td></tr>
</table>
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 displacement of marine turtles from habitat critical to the survival of a species
no disruption of biologically important behaviours of marine turtles within biologically important areas
no disruption of biologically important behaviours of migratory shorebirds or seabirds within important habitats
no adverse change to the values of the Montebello Marine Park.
CAPL considers that the petroleum activity, with the control measures as described for this aspect in place, meet this acceptable level. In particular that</td></tr>
</table>

	by managing the risk to marine fauna, that the risk to values of the AMP are also subsequently managed to this acceptable level.	
Environmental performance outcomes	**Environmental performance standard**	**Measurement criteria**
No displacement of marine fauna, or disruption of biologically important behaviours of marine fauna, from biologically important areas, important habitats, or habitat critical to the survival of a species from the petroleum activity No adverse change to the values of Australian Marine Parks from petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	**Vessel lights and signals** In accordance with regulatory requirements, vessels will implement light and signals appropriate to the nature of their operations	Records indicate that vessel lights and signals were consistent with the requirements of COLREGS and the *Navigation Act 2012 (Cth)* during the petroleum activity
	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 • use window coverings to shield internal lights from view (unless windows are required to be uncovered for safe operations).	Inspection records during night operations confirm only minimum lighting for safe operations and navigation is in use, where practicable operational lighting is directed downwards to working deck area, and internal window coverings are used (unless required for safe operations)
	Activity-specific HIRA—marine turtles Where the petroleum activity is required to be undertaken at night within habitat critical to the survival of a marine turtle species and during predicted peak nesting periods, an activity-specific HIRA will be undertaken prior to the petroleum activity commencing	Records show that activity-specific HIRA undertaken prior to the petroleum activity commencing
	Activity-specific HIRA—marine turtles Where required, these management measures will be considered where practicable: • risk-based inspections of vessels will be undertaken before mobilisation to identify potential strategies to reduce artificial light spill from vessels • if marine turtles are sighted near the path of a vessel, vessels will divert to avoid them (if safe to do so), or slow down to idling speed • 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.	Where undertaken, vessel inspection records show identified opportunities to reduce vessel artificial light spill Vessel marine fauna sighting records show if marine turtle interactions occurred within habitat critical for survival during predicted peak nesting period and what mitigation (e.g., divert or slow vessel) measure was implemented Inspection records during night operations within habitat critical for survival during predicted peak nesting period and what mitigation confirm only minimum lighting for safe operations is used
	Seabird management procedure Where the petroleum activity is required to be undertaken at night, the seabird management procedure	Inspection records during night operations confirm seabird management procedure was implemented as required

	will be implemented for the duration of activities	
	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

7.6 Underwater sound—continuous

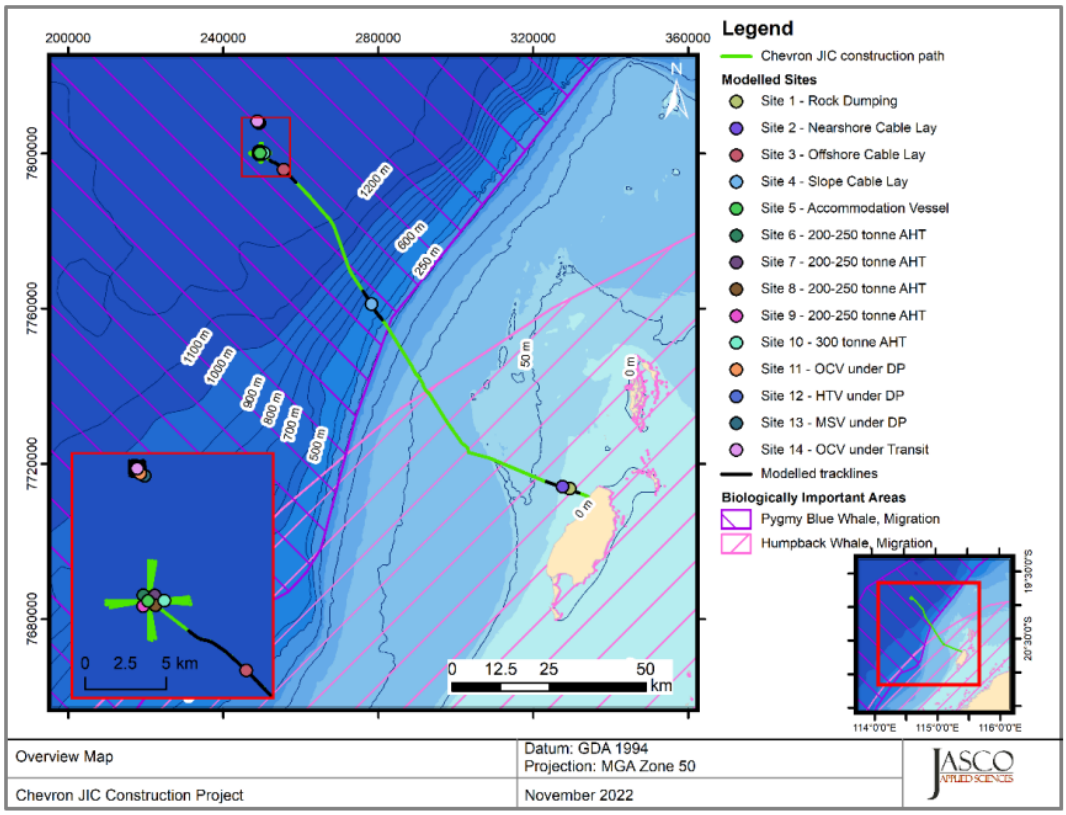
7.6.1 Acoustic modelling

CAPL commissioned JASCO Applied Sciences to conduct acoustic modelling to inform the risk assessment associated with underwater sound exposure from vessel operations (Ref. 89). Vessels produce broadband sound emissions—these are predominantly produced from propeller and thruster cavitation, with a smaller proportion of sound transmitted through the hull (e.g. from engines, gearing, and other mechanical systems) (Ref. 89).

The modelling was undertaken to assist in understanding the potential acoustic impact on receptors including marine mammals, sea turtles, and fish.

The modelling methodology considered scenario specific source levels and range-dependent environmental properties. Estimated underwater received acoustic levels for non-impulsive (continuous) sound sources are presented as sound pressure level (SPL), and as accumulated sound exposure levels (SEL) as appropriate for different noise effect criteria (Ref. 89).

The study included scenarios associated with cable lay, rock dumping, and offshore installation vessels that are relevant to the activities within scope of this EP (Figure 7-1; Table 7-2).



(Source: Ref. 89)

Figure 7-1: Locations for acoustic modelling

Table 7-2: Acoustic modelling sites and scenarios

Scenario	Associated sites	Scenario description	Approximate water depth	Broadband source level (dB re 1 µPa²m²s)
1	1	Near-shore rock dumping, under DP	24 m	Rock installation vessel: 180.5
2	2	Near-shore cable lay, under DP	27 m	CLV: 178.9
3	3	Offshore cable lay, under DP	1,275 m	CLV: 177.6
4	4	Continental slope cable lay, under DP	399 m	CLV: 177.6
5	5, 6, 7, 8, 9, 10	Accommodation vessel with five anchor handling tugs, all under DP	1,288–1,293 m	ASV: 174.3 Tugs: 193.1–193.9
6	11, 12, 13	Offshore construction vessel (OCV), with a heavy transport vessel and multi-purpose support vessel, all under DP	1,338 m	OCV: 195.0 HTV: 176.4 Support vessel: 182.7
7	14	OCV, under slow transit	1,338 m	OCV: 170.8

In the absence of modelling, the estimates of SPL from helicopter operations (149–162 dB re 1 µPa) (Ref. 61; Ref. 90) have been used for the purposes of behavioural thresholds for this consequence evaluation. Given the nature of

helicopter operations (i.e. crew transfers) covered under this EP, exposure to sound from this source for an extended period (e.g. 12 or 24 hours) is not credible, and as such, comparison against the cumulative SEL criterions is not relevant.

7.6.2 Exposure criteria

Different species groups perceive and respond to sound differently, and so a variety of exposure criteria for the different types of impacts and species groups have been considered. The following noise effect thresholds, based on current best available science, have been used in the impact and risk assessment:

- frequency-weighted accumulated sound exposure levels (SEL_{24h}) from Southall et al (Ref. 277) for the onset of permanent threshold shift (PTS)[40] and temporary threshold shift (TTS)[41] in marine mammals (Table 7-3)
- un-weighted SPL for behavioural threshold for marine mammals based on the current interim US National Oceanic and Atmospheric Administration (NOAA) criteria (Ref. 278) (Table 7-3)
- frequency-weighted accumulated sound exposure levels (SEL_{24h}) from Finneran et al (Ref. 80) for the onset of PTS and TTS in marine turtles (Table 7-3)
- sound exposure guidelines for behavioural effects in marine turtles from Popper et al (Ref. 84) (Table 7-3)
- sound exposure guidelines for fish, fish eggs, and larvae from Popper et al (Ref. 84) (Table 7-3).

Commonwealth guidance has defined “injury to Blue Whales” as both PTS and TTS hearing impairment, as well as any other form of physical harm arising from anthropogenic sources of underwater noise (Ref. 85).

While sirenians were not included in the JASCO study, the relevant exposure criteria has been included in Table 7-3, so that a qualitative comparison can be made during the risk assessment.

[40] PTS is a physical injury to an animals hearing organs.

[41] TTS is a temporary reduction in an animals hearing sensitivity due to receptor hair cells in the cochlea becoming fatigued.

Table 7-3: Noise effect criteria for continuous sound for different types of impacts and species groups

Receptor	Mortal or potential mortal injury	Recoverable injury	Permanent threshold shift	Temporary threshold shift	Masking	Behavioural
Low-frequency cetaceans	N/A	N/A	SEL_{24h}: 199 dB re 1 μPa^2s	SEL_{24h}: 179 dB re 1 μPa^2s	N/A	SPL: 120 dB re 1 µPa
High-frequency cetaceans	N/A	N/A	SEL_{24h}: 198 dB re 1 μPa^2s	SEL_{24h}: 178 dB re 1 μPa^2s	N/A	SPL: 120 dB re 1 µPa
Very high-frequency cetaceans	N/A	N/A	SEL_{24h}: 173 dB re 1 μPa^2s	SEL_{24h}: 153 dB re 1 μPa^2s	N/A	SPL: 120 dB re 1 µPa
Sirenians	N/A	N/A	SEL_{24h}: 206 dB re 1 μPa^2s	SEL_{24h}: 200 dB re 1 μPa^2s	N/A	SPL: 120 dB re 1 µPa
Marine turtles	N/A	N/A	SEL_{24h}: 220 dB re 1 μPa^2s	SEL_{24h}: 200 dB re 1 μPa^2s	N/A	(N) High (I) Moderate (F) Low
Fish (no swim bladder) (relevant to sharks)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	N/A	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish (swim bladder not involved in hearing)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	N/A	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish (swim bladder involved in hearing)	(N) Low (I) Low (F) Low	170 dB SPL for 48 hours	N/A	158 dB SPL for 12 hours	(N) High (I) High (F) High	(N) High (I) Moderate (F) Low
Fish eggs and fish larvae	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	N/A	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low	(N) High (I) Moderate (F) Low

Relative risk (high, moderate, low) is given for fauna at three distances from the source (near [N], intermediate [I] and far [F]).

7.6.3 Modelling outputs

Horizontal maximum distances (R_{max}) from sources associated with nearshore rock dumping, cable lay, FCS installation, and SCSt installation to the relevant noise effect criteria for marine mammals, turtles, and fish are shown in Table 7-4 to Table 7-7 (Ref. 89). Where distances to noise effect criteria varied between the modelled scenarios, the largest of these has been reported. The greatest horizontal distances are associated with Scenario 5 (associated with installation of the FCS) and Scenario 6 (associated with installation of the SCSt) where multiple vessels under DP are located in one area (Table 7-2).

SEL_{24h} is a cumulative metric that reflects the dosimetric impact of noise levels within 24 hours based on the assumption that a receptor is consistently exposed to the predicted noise levels at a fixed position. Marine fauna are not expected to remain stationary for a 24-hour period. Therefore, a modelled exposure area for the SEL_{24h} criteria does not mean that marine fauna travelling within this area will be impaired, but rather that they could be exposed to the sound level associated with auditory effects (either PTS or TTS) if they remained within the ensonified location for 24 hours.

Table 7-4: Modelled maximum horizontal distances (R_{max}) from nearshore rock dumping scenarios (Scenario 1) to reach noise effect criteria for continuous sound

Receptor	Recoverable injury	Permanent threshold shift	Temporary threshold shift	Behavioural
Low-frequency cetaceans	N/A	SEL_{24h}: 0.02 km	SEL_{24h}: 0.92 km	SPL: 3.9 km
High-frequency cetaceans	N/A	SEL_{24h}: –	SEL_{24h}: 0.02 km	SPL: 3.9 km
Very high-frequency cetaceans	N/A	SEL_{24h}: 0.02 km	SEL_{24h}: 0.26 km	SPL: 3.9 km
Marine turtles	N/A	SEL_{24h}: –	SEL_{24h}: 0.02 km	N/A
Fish (swim bladder involved in hearing)	SPL for 48 hours: –	N/A	SPL for 12 hours: –	N/A

A dash indicates the threshold was not reached within the limits of the modelling resolution (20 m).

Table 7-5: Modelled maximum horizontal distances (R_{max}) from cable lay scenarios (Scenarios 2, 3, and 4) to reach noise effect criteria for continuous sound

Receptor	Recoverable injury	Permanent threshold shift	Temporary threshold shift	Behavioural
Low-frequency cetaceans	N/A	SEL_{24h}: 0.05 km	SEL_{24h}: 0.17 km	SPL: 2.96 km
High-frequency cetaceans	N/A	SEL_{24h}: –	SEL_{24h}: 0.06 km	SPL: 2.96 km
Very high-frequency cetaceans	N/A	SEL_{24h}: 0.06 km	SEL_{24h}: 0.08 km	SPL: 2.96 km
Marine turtles	N/A	SEL_{24h}: –	SEL_{24h}: 0.05 km	N/A
Fish (swim bladder involved in hearing)	SPL for 48 hours: –	N/A	SPL for 12 hours: –	N/A

A dash indicates the threshold was not reached within the limits of the modelling resolution (20 m).

Table 7-6: Modelled maximum horizontal distances (R_{max}) from offshore FCS installation scenarios (Scenario 5) to reach noise effect criteria for continuous sound

Receptor	Recoverable injury	Permanent threshold shift	Temporary threshold shift	Behavioural
Low-frequency cetaceans	N/A	SEL_{24h}: 0.20 km	SEL_{24h}: 5.79 km	SPL: 18.7 km
High-frequency cetaceans	N/A	SEL_{24h}: –	SEL_{24h}: 0.10 km	SPL: 18.7 km
Very high-frequency cetaceans	N/A	SEL_{24h}: 0.12 km	SEL_{24h}: 3.12 km	SPL: 18.7 km
Marine turtles	N/A	SEL_{24h}: –	SEL_{24h}: 0.13 km	N/A
Fish (swim bladder involved in hearing)	SPL for 48 hours: –	N/A	SPL for 12 hours: 0.08 km	N/A

A dash indicates the threshold was not reached within the limits of the modelling resolution (20 m).

Table 7-7: Modelled maximum horizontal distances (R_{max}) from offshore SCSt installation scenarios (Scenarios 6 and 7) to reach noise effect criteria for continuous sound

Receptor	Recoverable injury	Permanent threshold shift	Temporary threshold shift	Behavioural
Low-frequency cetaceans	N/A	SEL_{24h}: 0.30 km	SEL_{24h}: 1.95 km	SPL: 17.1 km
High-frequency cetaceans	N/A	SEL_{24h}: 0.02 km	SEL_{24h}: 0.12 km	SPL: 17.1 km
Very high-frequency cetaceans	N/A	SEL_{24h}: 0.13 km	SEL_{24h}: 2.27 km	SPL: 17.1 km
Marine turtles	N/A	SEL_{24h}: 0.02 km	SEL_{24h}: 0.15 km	N/A
Fish (swim bladder involved in hearing)	SPL for 48 hours: –	N/A	SPL for 12 hours: 0.10 km	N/A

A dash indicates the threshold was not reached within the limits of the modelling resolution (20 m).
Note: maximum horizontal distances are associated with Scenario 6.

7.6.4 Pygmy Blue Whale and Humpback Whale exposure modelling

In addition to the acoustic modelling study, JASCO undertook an acoustic exposure analysis for migrating Pygmy Blue Whales and Humpback Whales (Ref. 89), which describes the modelled predictions of sound levels that individual Pygmy Blue Whales and Humpback Whales may receive during the petroleum activity.

Sound exposure distribution estimates are determined by moving large numbers of simulated animals ('animats') through a modelled time-evolving sound field, computed using specialised sound source and sound propagation models (Ref. 89). This approach provides the most realistic prediction of the maximum expected SPL, and the temporal accumulation of sound exposure level (SEL_{24h}) for comparison against the relevant thresholds (Ref. 89).

The JASCO Animal Simulation Model Including Noise Exposure (JASMINE) was used to model the movement of Pygmy Blue Whales and Humpback Whales

through the predicted sound field. Biologically meaningful movement rules were applied to each animat in the model to represent whale behaviours. The parameters used for forecasting realistic behaviours (e.g. diving and foraging depth, swim speed, surface times) were determined and interpreted from marine mammal studies (e.g. tagging studies) where available, or reasonably extrapolated from related or comparable species (Ref. 89).

The same seven scenarios from the acoustic modelling were considered for animal movement modelling. Due to their locations, Scenarios 1 and 2 were run for migrating Humpback Whales, while Scenarios 3 to 7 were run for migrating Pygmy Blue Whales. All scenarios were run for migrating animats restricted to their respective migratory BIAs as well as unrestricted.

The same noise effect criteria as defined for low-frequency cetaceans in Section 7.6.2 were used in this exposure modelling.

The modelled 95th percentile exposure ranges ($ER_{95\%}$) from sources associated with nearshore rock dumping, cable lay, FCS installation, and SCSt installation to the relevant noise effect criteria for Pygmy Blue Whales and Humpback Whales are shown in Table 7-8 to Table 7-11 (Ref. 89). For comparison, the horizontal maximum distances (R_{max}) for low-frequency cetaceans from the acoustic modelling in Section 7.6.3 are repeated in the tables.

Exposure ranges for SPL behavioural response criteria are typically comparable to the predicted acoustic ranges. Acoustic ranges are conservatively calculated using the maximum-over-depth sound fields while exposure ranges account for animats sampling the sound field vertically based on species-specific diving parameters, so exposure ranges are often slightly lower than acoustic ranges (Ref. 89).

Exposure ranges from animat modelling for PTS and TTS criteria are typically shorter than those predicted using acoustic propagation modelling because of the generally shorter time (‘dwell time’) to accumulate sound energy of the moving animats (Ref. 89).

Table 7-8: Modelled 95th percentile exposure ranges ($ER_{95\%}$) and probability of exposure (P_{exp}), compared to modelled maximum horizontal distances maximum horizontal distances (R_{max}) from nearshore rock dumping scenarios (Scenario 1) to reach noise effect criteria for continuous sound

Modelling	Parameter	Permanent threshold shift	Temporary threshold shift	Behavioural
Acoustic modelling	R_{max}	SEL_{24h}: 0.02 km	SEL_{24h}: 0.92 km	SPL: 3.9 km
Exposure modelling for Humpback Whale (mother and calf)^	$ER_{95\%}$	SEL_{24h}: –	SEL_{24h}: 0.02 km	SPL: 3.34 km
	P_{exp}	N/A	91%	>99%
Exposure modelling for Humpback Whale (mother [no calf])^	$ER_{95\%}$	SEL_{24h}: –	SEL_{24h}: 0.02 km	SPL: 3.34 km
	P_{exp}	N/A	>99%	>99%

A dash indicates no animat was exposed above the threshold.

P_{exp} is the probability of animats travelling within the ER95% being exposed above the threshold.

^ Results are shown for animats not restricted to within a BIA boundary.

Table 7-9: Modelled 95th percentile exposure ranges ($ER_{95\%}$) and probability of exposure (P_{exp}), compared to modelled maximum horizontal distances maximum horizontal distances (R_{max}) from cable lay scenarios (Scenarios 2, 3, and 4) to reach noise effect criteria for continuous sound

Modelling	Parameter	Permanent threshold shift	Temporary threshold shift	Behavioural
Acoustic modelling	R_{max}	SEL_{24h}: 0.05 km	SEL_{24h}: 0.17 km	SPL: 2.96 km
Exposure modelling for Humpback Whale (mother and calf)^	$ER_{95\%}$	SEL_{24h}: –	SEL_{24h}: 0.02 km	SPL: 2.47 km
	P_{exp}	N/A	89%	>99%
Exposure modelling for Humpback Whale (mother [no calf])^	$ER_{95\%}$	SEL_{24h}: –	SEL_{24h}: 0.02 km	SPL: 2.47 km
	P_{exp}	N/A	>99%	>99%
Pygmy Blue Whale (northern migration)^	$ER_{95\%}$	SEL_{24h}: –	SEL_{24h}: 0.01 km	SPL: 0.72 km
	P_{exp}	N/A	7%	87%

A dash indicates no animat was exposed above the threshold.

P_{exp} is the probability of animats travelling within the ER95% being exposed above the threshold.

^ Results are shown for animats not restricted to within a BIA boundary.

Table 7-10: Modelled 95th percentile exposure ranges ($ER_{95\%}$) and probability of exposure (P_{exp}), compared to modelled maximum horizontal distances maximum horizontal distances (R_{max}) from offshore FCS installation scenarios (Scenario 5) to reach noise effect criteria for continuous sound

Modelling	Parameter	Permanent threshold shift	Temporary threshold shift	Behavioural
Acoustic modelling	R_{max}	SEL_{24h}: 0.20 km	SEL_{24h}: 5.79 km	SPL: 18.7 km
Pygmy Blue Whale (northern migration)^	$ER_{95\%}$	SEL_{24h}: 0.01 km	SEL_{24h}: 0.05 km	SPL: 15.4 km
	P_{exp}	15%	79%	>99%

A dash indicates no animat was exposed above the threshold.

P_{exp} is the probability of animats travelling within the ER95% being exposed above the threshold.

^ Results are shown for animats not restricted to within a BIA boundary.

Table 7-11: Modelled 95th percentile exposure ranges ($ER_{95\%}$) and probability of exposure (P_{exp}), compared to modelled maximum horizontal distances maximum horizontal distances (R_{max}) from offshore SCSt installation scenarios (Scenarios 6 and 7) to reach noise effect criteria for continuous sound

Modelling	Parameter	Permanent threshold shift	Temporary threshold shift	Behavioural
Acoustic modelling	R_{max}	SEL_{24h}: 0.30 km	SEL_{24h}: 1.95 km	SPL: 17.1 km
Pygmy Blue Whale (northern migration)^	$ER_{95\%}$	SEL_{24h}: 0.01 km	SEL_{24h}: 0.05 km	SPL: 13.1 km
	P_{exp}	6%	64%	99%

A dash indicates no animat was exposed above the threshold.

P_{exp} is the probability of animats travelling within the ER95% being exposed above the threshold.

^ Results are shown for animats not restricted to within a BIA boundary.

7.6.5 Risk Assessment

Source

Activities identified as having the potential to result in underwater sound are:

- field support—vessel or helicopter operations during the petroleum activity (including installation and pre-commissioning, or IMR activities) within the OA.

These activities result in the emission of continuous sound.

Potential impacts and risks

Impacts	C	Risks	C
Underwater sound emissions may result in:		A change in ambient underwater sound may result in:	
• localised and temporary change in ambient underwater sound.	5	• behavioural response	5
		• auditory impairment, TTS, PTS, recoverable or non-recoverable injury to marine fauna	-
		• changes to values and sensitivities of marine protected areas	5
		• changes to cultural heritage values	5

Consequence evaluation

Localised and temporary change in ambient underwater sound

Anthropogenic underwater sound emitted during the petroleum activity will result in a change in ambient noise levels.

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 vocalising near simultaneously in reasonably close proximity to each other) (Ref. 86). 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. 86).

Studies of underwater sound generated from offshore vessels when holding position (on DP) demonstrate measured SPL up to 137 dB re 1 µPa and 120 dB re 1mPa at 405 m and ~3-4 km from the sound source respectively (Ref. 90). When underway at ~12 knots vessel sound of 120 dB re 1 µPa was recorded at 0.5–1 km (Ref. 90). Generally, during installation operations, the vessels will be moving at low speeds (<5 knots), producing lower underwater sound emissions than what were recorded by the study.

Sound emitted from helicopter operations is typically below 500 Hz (Ref. 91). 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. 61; Ref. 90). Richardson et al. (Ref. 61) 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 environmental impact limited to the duration of vessel operations, and returning to ambient levels on completion.

Concurrent activities

As identified in Table 3-2 and discussed in Section 3.5.1.1, there is the potential for more than one vessel to be operating within the OA. When there is more than one vessel present within the OA, the vessels may not always in close proximity to each other (i.e. the ensonified areas from sound emissions from the vessels would not overlap), or where they are in proximity, the activity overlap would occur for a limited duration (e.g. ~2–90 days).

For the purposes of risk assessment, the longest duration of potential concurrent activities in proximity to each other would occur during the installation of the SCSt process modules, SCMS, and sliding spools. In this scenario, a HLV and LCV vessel will be within close proximity to each within the Jansz field (around the Jansz MPTS) for ~90 days. A HTV will also be on site during this scope,

but presence of this vessel will be intermittent during this period as it transfers J-IC assets between port and site for installation. The installation site for the SCSt is ~110 km and ~130 km offshore from Montebello Islands and Barrow Island respectively. Sound emissions from the two vessels would result in a slightly greater spatial area being exposed, as well as cumulative emissions in the area between the two vessels.

Similarly, for the purposes of risk assessment, the greatest number of vessels within the OA at any one time would occur if installation activities for the FCS, SCSt, and HVSC occurred concurrently (Section 3.5.1.1; Table 3-2). In this scenario, the duration could be up to ~60 days (based on concurrent installation of mooring lines and the FCS, and the SCSt process modules, SCMS, and sliding spools). Given the locations of these activities, the potential spatial overlap in ensonified areas would occur offshore within the Jansz field area.

No spatial overlap in vessel light emissions are expected to occur close to Barrow Island. If the trenching vessel and rock dumping vessel were both operating at KP 99.6 at the same time, this would only occur for hours, given that the trenching vessel would be transiting along the HVSC route. KP 99.6 is located along the HVSC route, ~28 km from Barrow Island, in ~62 m water depth.

Given the changes arising from concurrent vessel operations is of limited duration (days to months), and only within a proportion of the OA, the impacts associated with a direct change in ambient sound levels was determined to be Minor (5).

Marine Mammals

Behavioural response

Acoustic modelling for vessels associated with the installation of the HVSC (cable lay and rock dumping) indicate that the maximum radial distance in any direction from the source to the behavioural noise effect criteria was 3.9 km from the sound source (Table 7-4, Table 7-5). This maximum value was associated with the nearshore rock dumping activities, and was slightly smaller for cable lay activities with a maximum of 2.96 km predicted for nearshore, reducing with distance offshore to 1.78km at the slope, and 1.06 km for the offshore scenario (Ref. 89).

Acoustic modelling for vessels associated with the installation of the FCS indicate that the maximum radial distance in any direction from the source to the behavioural noise effect criteria was 18.7 km from the sound source (Table 7-6).

Acoustic modelling for vessels associated with the installation of the SCSt indicate that the maximum radial distance in any direction from the source to the behavioural noise effect criteria was 17.1 km from the sound source (Table 7-7).

As identified in Section 4.3.3.1, several marine mammal species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the Sound EMBA. The threatened and/or migratory cetaceans that may be present within the Sound EMBA are low-frequency and high-frequency cetaceans (Section 4.3.3.1). A migration BIA for the Pygmy Blue Whale overlaps with the offshore extent of the Sound EMBA; with peak migration periods occurring April to August, and November to late-December. The Humpback Whale migration BIA also overlaps part of the Sound EMBA (associated with the installation of the HVSC); migration occurring between June and October. Very high-frequency cetaceans (e.g. *Kogia* spp.) were identified as species or species habitat that may occur within the OA (appendix b) but are not listed as threatened and/or migratory under the EPBC Act. The PMST database also indicated that dugongs may be present within the Sound EMBA. Except for Pygmy Blue Whales and Humpback Whales, there are no known BIAs for other cetacean species within or adjacent to the Sound EMBA; and it is expected that any presence of marine mammal species within the Sound EMBA would be of a transitory nature.

As the Sound EMBA overlaps a migration BIA for Humpback Whales, there is the potential for whales to be present within this area during the predicted migration periods (June to October). The part of the OA that intersects with the Humpback Whale BIA is associated with the installation of the HVSC. Given the indicative schedule for J-IC activities (from mid-2024 to mid-2026), there is the potential for overlap with Humpback Whale migration. Studies (Ref. 223) suggest that northbound Humpback Whales tend to travel 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. Animat modelling for Humpback Whales indicated that the maximum distance to the behavioural noise effect criteria was ~3.34 km (Table 7-8), which is not dissimilar to the distance (~3.9 km; Table 7-4) from acoustic modelling for low-frequency cetaceans.

As the Sound EMBA overlaps a migration BIA for Pygmy Blue Whales, there is the potential for a larger number of this species to be present during migration periods (April to August, and November to December). The part of the OA that intersects with the Pygmy Bluw Whale BIA is associated with the installation of the HVSC (offshore extent only), FCS, and SCSt. Given the indicative schedule for J-IC activities (from mid-2024 to mid-2026), there is the potential for overlap with Pygmy Blue Whale migration. The Sound EMBA also intersects with areas that have been identified as most important areas for Pygmy Blue Whale migration along the west coast (Figure 4-7). However, it is expected

based on satellite tracking and acoustic detection studies that Pygmy Blue Whales are likely to travel further offshore than the defined BIA, particularly on their southern migration (November to December), but also during the northern migration (April to August) (Section 4.3.3.1.2).

'Possible Foraging Areas' as defined within the *Conservation Management Plan for the Blue Whale* (Ref. 60), and characterised as foraging BIAs, occur >200 km southwest and >870 km northeast of the FCS and SCSt. Data from a recent study (Ref. 87) identified 'most important areas' for foraging for the Pygmy Blue Whale based on proxy indicators. There is some overlap between these 'most important areas' for foraging and the Sound EMBA associated with installation of the FCS and SCSt (Figure 4-8). Animat modelling for Pygmy Blue Whales indicated that the maximum distance to the behavioural noise effect criteria from scenarios associated with FCS and SCSt installation was ~15.4 km and ~13.1 km respectively (Table 7-10, Table 7-11), which is not dissimilar to the distances (~18.7 km and ~17.1 km; Table 7-6, Table 7-7) from acoustic modelling for low-frequency cetaceans.

The duration of underwater sound emissions from vessels within the OA will vary with activity, ranging from ~2 days (each nearshore rock dumping trip [associated with the HVSC installation]) to ~5–6 months for SCSt installation campaigns.

Estimates of SPL for helicopters range 149–162 dB re 1 µPa (Ref. 61; Ref. 90), which is above the noise exposure criterion for behavioural response. 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. 61). The helicopter operations covered under this EP are short discrete trips (i.e. crew transfers). Frequency of helicopter flights will vary during the activities, but could be daily during FCS pre-commissioning, commissioning, and start-up (Section 3.5.2). Therefore, given the limited nature of the exposure, potential impacts from helicopters on cetacean behaviour are not evaluated further.

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).

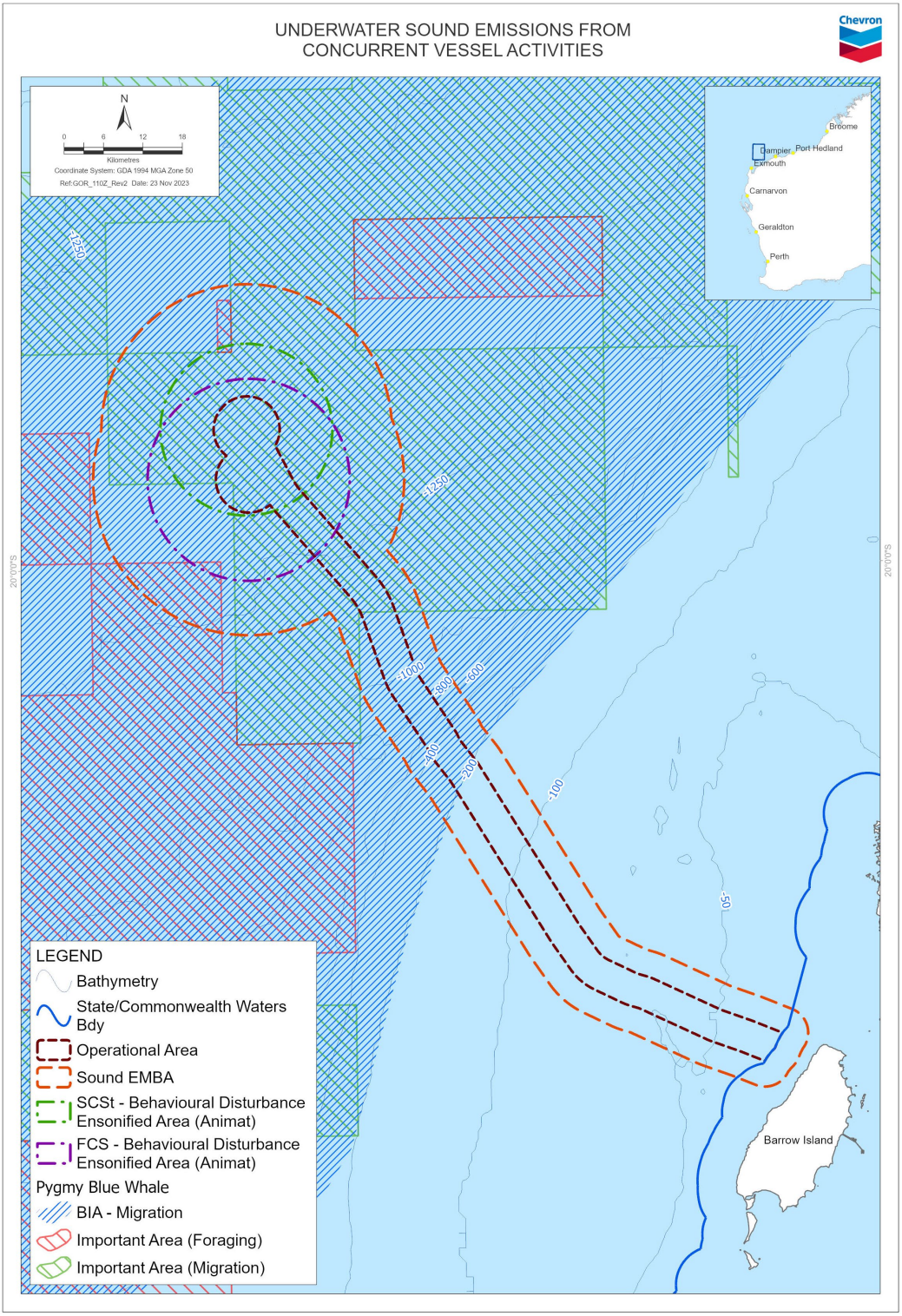
Behavioural response (concurrent activities)

As described above, potential for concurrent activities that would result in an overlapping (and larger) ensonified area than the predicted extent from each individual scope (e.g. SCSt or FCS) would occur >100 km from the nearest coast (Montebello Islands) within the Jansz field area.

The installation of the mooring lines and FCS (~60 days duration) is scheduled to occur between November 2025 and January 2026; and , and the installation of the SCSt process modules, SCMS, and sliding spools (~90 days duration) is scheduled to occur between November 2025 and February 2026 (Table 3-2). This period coincides with the predicted peak period of southern migration of Pygmy Blue Whales (November and December) (Table 4-14).

The FCS and SCSt are located within the migration BIA for the Pygmy Blue Whale (Figure 4-7). While opportunistic feeding during migration may occur, the 'most important areas' for foraging for the Pygmy Blue Whale are ~12 km north of the SCSt and ~13 km southwest of the FCS (Figure 4-8).

Given the distance between the FCS and the SCSt (~7.5 km), and the predicted maximum distances to the behavioural noise effect criteria from scenarios associated with FCS and SCSt of ~15.4 km and ~13.1 km respectively (Table 7-10, Table 7-11), the overall spatial extent of predicted ensonified areas is not expected to increase, however there will be some overlap in ensonified areas between the FCS and SCSt as shown in the figure below. While this cumulative ensonified area occurs within the migration BIA, it remains outside of areas identified as 'most important areas' for foraging.



For concurrent vessel activities not occurring within proximity of each other, multiple individual ensonified areas may occur. Given the small (up to ~3.9 km for nearshore, or ~0.33 km for offshore[42]) distances from each individual vessels where sound emissions may result in behavioural responses to cetaceans, and the location of the different activities within the broader extent of the

[42] Predicted maximum distance to behavioural disturbance noise effect criteria for the single vessel under Scenario 7 was 0.33 km (Ref. 89).

OA (~130 km in length), the cumulative impact of multiple ensonified areas is not expected to significantly adversely affect the biological behaviours of cetaceans in the OA.

Potential concurrent vessel activities, and as such concurrent underwater sound emissions from vessels, have the potential to cause localised and temporary impacts to a individuals over the course of the petroleum activity, CAPL has ranked the consequence associated this impact as Minor (5).

TTS and PTS

Acoustic modelling for vessels associated with the installation of the HVSC (cable lay and rock dumping) indicated that the R_{max} from the source to TTS and PTS criteria for low-frequency cetaceans was 0.92 km and 0.05 km respectively; for high-frequency cetaceans was 0.06 km and the PTS threshold was not met; and for very high-frequency cetaceans was 0.26 km and 0.06 km respectively (Table 7-4, Table 7-5). Animat exposure modelling indicated that the maximum distance to the TTS noise effect criteria for Pygmy Blue Whales was 0.01 km from the acoustic source, and the PTS noise effect criteria was not predicted to be exceeded (Table 7-9). The maximum distance to the TTS noise effect criteria for Humpback Whales was 0.02 km and exceedance of the PTS noise effect criteria was not predicted (Table 7-8, Table 7-9). Given that SEL is a cumulative metric, this would require Humpback Whales to remain within ~20 m of the sound source for at least a 24-hour period before TTS auditory impairments may occur.

Acoustic modelling for vessels associated with the installation of the FCS indicated that the R_{max} from the source to TTS and PTS criteria for low-frequency cetaceans was 5.79 km and 0.20 km respectively; for high-frequency cetaceans was 0.10 km and the PTS threshold was not met; and for very high-frequency cetaceans was 3.12 km and 0.12 km respectively (Table 7-6). Animat exposure modelling indicated that the maximum distance to the TTS and PTS noise effect criteria for Pygmy Blue Whales was 0.05 km and 0.01 km from the acoustic source respectively (Table 7-9). For Pygmy Blue Whales, this requires them to remain within ~10–50 m of the sound source for at least a 24-hour period before TTS or PTS auditory effects may occur.

Acoustic modelling for vessels associated with the installation of the SCSt indicated that the R_{max} from the source to TTS and PTS criteria for low-frequency cetaceans was 1.95 km and 0.30 km respectively; for high-frequency cetaceans was 0.12 km and 0.02 km respectively; and for very high-frequency cetaceans was 0.15 km and 0.02 km respectively (Table 7-7). Animat exposure modelling indicated that the maximum distance to the TTS and PTS noise effect criteria for Pygmy Blue Whales was 0.05 km and 0.01 km from the acoustic source respectively (Table 7-11). For Pygmy Blue Whales, this requires them to remain within ~10–50 m of the sound source for at least a 24-hour period before TTS or PTS auditory effects may occur.

The noise effect criteria for sirenians (dugongs) for TTS is equivalent to that of marine turtles, so the estimated distance to the SEL_{24} for TTS is ~0.05 km. The noise effect criteria for sirenians for PTS is between that of marine turtles and low-frequency cetaceans, and as such the estimated distance to the SEL_{24} for PTS may be up to ~0.05 km.

Given that behavioural responses are predicted at distances much larger (in the scale of kilometres) than within ~50 m of a vessel sound source, it is unlikely that marine mammals will remain within the immediate proximity of the installation vessel fleet for extended durations so that auditory impairment or injury would occur. As such the risk of TTS or PTS to marine mammals is not considered credible and has not been evaluated further.

The helicopter operations covered under this EP are short discrete trips (i.e. crew transfers). Frequency of helicopter flights will vary during the activities, but could be daily during FCS pre-commissioning, commissioning, and start-up (Section 3.5.2). Given the short duration of helicopter presence within the OA, 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.

TTS and PTS (concurrent activities)

Given the predicted distances for TTS or PTS auditory impairments to occur, and the distances between operating vessels when and if they are operating in the OA concurrently, no spatial overlap in ensonified areas are predicted. As such, the risk of auditory impairment to cetaceans from concurrent activities is not considered credible and has not been evaluated further.

Marine reptiles

Seasnakes

The threatened Short-nosed Seasnake or Leaf-scaled Seasnake are not expected to be present within the Sound EMBA given known habitat preferences for shallow water and reef habitat; underwater sound has also not been identified as a threat for either species (Ref. 302; Ref. 303). Other EPBC marine listed seasnake species may occur in broader habitats within the NWMR, however noise pollution has not been identified as a pressure for seasnake species (Ref. 332). As

such, underwater sound is not considered to be a significant factor in seasnake behaviour or survival.

Marine Turtles—Behavioural response

Continuous sound sources have been identified as a high risk of causing behavioural changes within the near (tens of metres), a moderate risk within intermediate (hundreds of metres) vicinity of a sound source for marine turtles; this risk decreases with increasing distance from the source (Table 7-3). Continuous sound of any level that is detectable by turtles can mask signal detection, and thus may have a pervasive effect on behavior; however, the consequences of this masking and any attendant behavioral changes for the survival turtles are unknown (Ref. 84).

As identified in Section 4.3.3.2, marine turtle species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the Sound EMBA. Internesting buffer BIAs and internesting habitat critical for the survival of Flatback, Green, and Hawksbill turtles also overlap with the Sound EMBA.

The Recovery Plan for Marine Turtles in Australia (Ref. 56) identifies noise interference as a key threat. Marine turtles do not have external ears, but potentially use sound for navigation, locating prey and avoiding predators (Ref. 56). Exposure to chronic (continuous) loud noise in the marine environment may lead to avoidance of important habitat (Ref. 56).

The *Recovery Plan for Marine Turtles in Australia* (Ref. 56) defines the nesting habitat critical for the survival of each species at a stock level. The closest nesting habitat critical to the survival of a species to the OA includes Barrow, Montebello, and Lowendal islands, which have been identified as nesting habitat for Flatbacks, Greens, and/or Hawksbill turtles (Ref. 56). At its closest, the OA is located ~5.5 km from the coast of Barrow Island (i.e. the 3 nm coastal waters limit). The part of the OA that occurs near Barrow Island is associated with the installation of the HVSC. As potential behaviour effects are predicted to be restricted to distances within hundreds of metres of a sound source, no coastal areas (and therefore no adult nesting turtles, or turtle hatchlings) are expected to be exposed. In addition, the duration of activities occurring within this part of the OA closest to Barrow Island is expected to be relatively low, with vessels typically moving along the HVSC route and away from the island, and not remaining stationary for extended durations.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 56) defines internesting habitat critical for survival of a species as a distance seaward from nesting habitat critical for the survival of a species of 60 km for Flatbacks and 20 km for Green and Hawksbill turtles. Recent studies (Ref. 75) have indicated that the internesting behaviour of Flatback Turtles on the NWS appears more spatially restricted than that suggested by the Recovery Plan (Ref. 56). Whittock et al (Ref. 75) reported that Flatback Turtles prefer habitats within proximity of the coast and at relatively shallow depths during their internesting periods. Unsuitable Flatback Turtle internesting habitat was defined as waters >25 m deep and >27 km from the coast (Ref. 75). This suggests that although the OA does overlap with some internesting habitat critical for the survival of the species, due to the OA being located offshore in water depths ranging between ~25–1,350 m, and that Flatback Turtle nesting is more common on the east coast beaches of Barrow Island (i.e. opposite side of the island to the OA), the majority of the OA may not present preferred internesting habitat for this species. Green and Hawksbill turtles also demonstrate spatially restricted behaviour during internesting, and have been recorded as staying with within 5 km of Barrow Island and within shallow coastal waters (Ref. 200). Consequently, given observed behaviours and internesting habitat preferences, only a small number of marine turtles are expected to be present within the OA, and any disruption to their behaviour is expected to be spatially limited as potential behaviour effects are predicted to be restricted to distances within hundreds of metres of a sound source. In addition, the duration of activities occurring within this part of the OA closest to Barrow Island is expected to be relatively low, with vessels typically moving along the HVSC route and away from the island, and not remaining stationary for extended durations.

Marine Turtles—TTS and PTS

Acoustic modelling for vessels associated with the installation of the HVSC (cable lay and rock dumping) indicate that the maximum radial distance in any direction from the source to the TTS noise effect criteria was 0.05 km from the sound source, and the PTS noise effect criteria was not predicted to be exceeded (Table 7-4, Table 7-5). TTS for marine turtles from these vessels is not considered credible as it requires turtles to remain in the immediate vicinity (~50 m) of the vessel over a 24-hour period; and therefore not been considered further.

Acoustic modelling for vessels associated with the installation of the FCS indicate that the maximum radial distance in any direction from the source to the TTS noise effect criteria was 0.13 km from the sound source, and the PTS noise effect criteria was not predicted to be exceeded (Table 7-6).

Acoustic modelling for vessels associated with the installation of the SCSt indicate that the maximum radial distance in any direction from the source to the TTS and PTS noise effect criteria was 0.15 km and 0.02 km from the sound source respectively (Table 7-7). PTS for marine turtles

from these vessels is not considered credible as it requires turtles to remain in the immediate vicinity (~20 m) of the vessel over a 24-hour period; and therefore not been considered further.

The FCS and SCSt are located >100 km from the nearest coast (Montebello Islands), and >50 km further offshore than any BIA or habitat critical to the survival for any of the marine turtle species (Flatback, Green, Hawksbill turtles) that are known to nest on Montebello and Barrow islands. Any presence of marine turtles in these deep offshore waters is expected to be of a transitory nature only. If present, the turtle would need to remain within ~130–150 m of the installation vessel fleet before auditory effects would start to occur. Given Popper et al (Ref. 84) indicates that within these sorts of distances (i.e. hundreds of metres from a continuous sound source) there is a moderate risk of behavioural effects on marine turtles, it is unlikely that turtles will remain within ~130–150 m of the installation vessel fleet for extended durations.

The helicopter operations covered under this EP are short discrete trips (i.e. crew transfers). Frequency of helicopter flights will vary during the activities, but could be daily during FCS pre-commissioning, commissioning, and start-up (Section 3.5.2). Given the short duration of helicopter presence within the OA, 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.

Given that the ensonified area for SEL_{24h} TTS is not predicted to overlap with the habitat suitable for internesting, and that if marine turtles did occur offshore within the OA, only localised short-term behavioural impacts to individuals have the potential to arise from these activities and have therefore been evaluated as Incidental (6).

TTS and PTS (concurrent activities)

Given the predicted distances for TTS auditory impairments to occur, and the distances between operating vessels when and if they are operating in the OA concurrently, no spatial overlap in ensonified areas are predicted. As such, the risk of auditory impairment to marine reptiles from concurrent activities is not considered credible and has not been evaluated further.

Fish, including sharks and rays

Behavioural response

Continuous 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 (tens of metres) and intermediate (hundreds of metres) vicinity of a sound source for all fish groups, including eggs and larvae (Table 7-3); these risks decrease with increasing distance from the source. Continuous 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. 84). 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 Sound EMBA. A foraging BIA for the Whale Shark also overlaps with the Sound EMBA. A spawning ground for the EPBC Act listed conservation dependent Southern Bluefin Tuna also intersects with the Sound EMBA (Section 4.4.1.1).

Whale Shark migration along the WA coast occurs mainly between July and November (Section 4.3.3.3.1). Based on the indicative activity schedule (mid-2024 to mid-2026), there is potential for temporal overlap with the Whale Shark migration period. The part of the OA (and therefore Sound EMBA) that intersects with this Whale Shark BIA is associated with HVSC installation activities, and as such vessels are expected to be moving along the HVSC route and, and not remaining stationary for extended durations. The OA associated with the installation and pre-commissioning of the FCS and SCSt does not intersect with the Whale Shark BIA. It is expected that the potential effects to Whale Sharks associated with underwater sound will be the same as for other pelagic fish species.

The spawning ground for Southern Bluefin Tuna extends between Java and northern WA, covering an area of ~1,850,534 km^2. Two peaks have been observed in Southern Bluefin Tuna spawning activity: September–October and February–March (Ref. 338; Ref. 339).The part of the OA (and therefore Sound EMBA) that intersects with this spawning ground is predominantly associated with the installation of the FCS and SCSt (areas of overlap are ~152 km^2 [0.008%) and 1,276 km^2 [0.07%] respectively). Underwaters sound has not been identified as a threat within the Listing Advice on Southern Bluefin Tuna (Ref. 344). It is expected that the potential effects to Southern Bluefin Tuna associated with underwater sound will be the same as for other pelagic fish species or larvae.

Pelagic fish species are likely to be transient through the Sound EMBA. 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 moving away from the area (Ref. 92). Demersal fish species may reside around existing subsea infrastructure (i.e. if it is providing suitable artificial habitat) within the Sound EMBA. However, given the water depths within most of the Sound EMBA, the predicted 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).

Behavioural response (concurrent activities)

Given the predicted distances for behavioural responses to occur (i.e. tens to hundreds of metres from a source), and the distances between operating vessels when and if they are operating in the OA concurrently, no spatial overlap in ensonified areas are predicted. As such, the risk of behavioural responses to fish from concurrent activities is not considered credible and has not been evaluated further.

TTS and Recoverable injury

Continuous sound sources have been identified as low risk of causing recoverable injury or mortal or potential mortality to fish with no swim bladders, those with bladders not involved in hearing, or to fish eggs and larvae (Table 7-3).

For fish species with a swim bladder involved in hearing, acoustic modelling for all scenarios indicates that the criterion for recoverable injury was not predicted to be exceeded, and as such has not been evaluated further.

For fish species with a swim bladder involved in hearing, acoustic modelling for vessels associated with the installation of the HVSC (cable lay and rock dumping) also indicated that the TTS criterion was not reached within the limits of the modelling resolution (Table 7-4, Table 7-5), and therefore this has not been considered further.

For fish species with a swim bladder involved in hearing, acoustic modelling for vessels associated with the installation of the FCS and the SCSt indicate that the maximum radial distance in any direction from the source to the TTS noise effect criteria was 0.08 km and 0.10 km from the sound source respectively (Table 7-6, Table 7-7).

The FCS and SCSt are located >50 km further offshore than the Whale Shark foraging BIA, and in deep waters (~1,290–1,345 m) with no known emergent features. Any presence of fish or sharks in these deep offshore waters is expected to be of a transitory nature only. If present, the fish would need to remain within ~80–100 m of the installation vessel fleet before auditory effects would start to occur. Given Popper et al (Ref. 84) indicates that within these sorts of distances (i.e. tens to hundreds of metres from a continuous sound source) there is a moderate to high risk of behavioural effects on fish, it is unlikely that they will remain within close proximity of the installation vessel fleet for extended durations.

The helicopter operations covered under this EP are short discrete trips (i.e. crew transfers). Frequency of helicopter flights will vary during the activities, but could be daily during FCS pre-commissioning, commissioning, and start-up (Section 3.5.2). Given the short duration of helicopter presence within the OA, 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.

Given that the ensonified area for SEL_{24h} TTS is not predicted to overlap with the Whale Shark BIA, and that if fish (including sharks and rays) did occur offshore within the OA, only localised short-term behavioural impacts to individuals have the potential to arise from these activities and have therefore been evaluated as Incidental (6).

TTS and Recoverable injury (concurrent activities)

Given that recoverable injury thresholds were not predicted to be reached, and the distances for potential TTS effects were limited to fish remaining within ~80–100 m of the installation vessel fleet for extended durations, and the distances between operating vessels when and if they are operating in the OA concurrently, no spatial overlap in ensonified areas are predicted. As such, the risk of auditory impairment to fish from concurrent activities is not considered credible and has not been evaluated further.

Changes to values and sensitivities of marine protected areas

The Sound EMBA overlaps with the Commonwealth Montebello Marine Park. The part of the Sound EMBA that overlaps with the marine park is associated with installation of the HVSC. The FCS and SCSt are located >50 km further offshore from the Montebello Marine Park.

The Montebello Marine Park is zoned as a Multiple Use Zone (IUCN VI), which is a zone “managed to allow ecologically sustainable use while conserving ecosystems, habitats and native species. The zone allows for a range of sustainable uses, including commercial fishing and mining where they are consistent with park values” (Ref. 67).

The natural values of this AMP include species listed as threatened, migratory, marine, or cetacean under the EPBC Act, as well as any identified BIAs for regionally significant marine fauna.

Potential impacts to the values of the Montebello Marine Park may occur due to impacts on marine fauna. The consequence evaluations to these receptors are provided above, and were risk assessed as Minor (5). It is therefore expected that there would also be no long-term or significant impacts to the values of the Montebello Marine Park.

CAPL consider that the petroleum activity can be undertaken in a manner that is not inconsistent with the objectives of the *North-west Marine Parks Network Management Plan* (Ref. 67).

As such, CAPL has ranked the consequence for cultural values consistent with that for marine fauna, as Minor (5).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was marine fauna (e.g. whales, dugongs, turtles; Table 4-15). The consequence evaluations to these receptors are provided above.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from the emission of continuous (non-impulsive) sound within the OA is anticipated. The consequence evaluations for marine fauna are provided above, and were assessed as having a localised and minor environmental impact, and is not expected to affect the overall population of the species. Further, as described in the above evaluations, the source of underwater sound emissions within the OA (i.e. vessels) is temporary and is not expected to affect the long-term underwater soundscape of the marine environment. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from underwater sound emissions within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from underwater sound emissions within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as Minor (5).

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 relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in ‘external context’ below, and within appendix d).

Although some species that are known to be sensitive to underwater sound have the potential to be exposed to underwater sound 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. However, as this aspect is listed as a key threat to protected matters under documents made or implemented under the EPBC Act, and can result in a credible impact or risk, additional control measures were also considered.

Good practice control measures

Control measure	Description
Managing Safe Work (MSW) process	CAPL’s *Managing Safe Work OE Process* (Ref. 35) ensures that workplace safety and health hazards are assessed and managed. The permit to work (PTW) system is part of this process and includes simultaneous operations (SIMOPS) and hazard analysis.

	Where required under the MSW process, a SIMOPS Plan will be developed to identify and manage hazards arising from concurrent J-IC vessel activities when occurring within the same area. The SIMOPS Plan will include a communication protocol between vessels to share near-real time marine fauna observations.
Vessels under transit within the OA	For vessels under transit within the OA, the following caution, approach, or separation distances (and associated vessel speeds) will be maintained by the vessels: • caution and no approach zones for cetaceans as described in EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans (Cth) • separation distance of 30 m for Whale Sharks and 100 m for Dugongs (as described in the Biodiversity Conservation Regulations 2018 [WA]) • separation distance of 30 m for marine turtles • vessels must operate at ≤6 knots within caution zones or when moving away to maintain a no-approach zone or separation distance.
Helicopters under transit within the OA	For helicopters under transit within the OA, the following marine fauna interaction requirements will be maintained by the helicopters: • height and distance from cetaceans as described in EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans (Cth) • separation distance of 500 m for Whale Sharks, Dugongs, and marine turtles.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
Petroleum activity schedule—Adjust to reduce likelihood of presence of EPBC listed threatened and/or migratory species	By altering the timing of the petroleum activity to reduce overlap with the predicted seasonal presence of protected marine fauna within the OA may consequently reduce the likelihood (and residual risk) of auditory impairment or injuries occurring. However, as shown in Table 4-14, activities during any month of the year will result in the overlap of some protected marine fauna, and therefore avoidance of all seasonal sensitivities is not possible.	N/A
Petroleum activity schedule—Adjust the HVSC installation scope to avoid predicted peak migration periods for Humpback Whales	The predicted peak migration periods in the Montebello Island region for Humpback Whales is late-July (northern) and early-September (southern) (Table 4-14). Scheduling the petroleum activity to avoid the predicted peak migration periods is not possible without extending the duration of the	The cost of implementing temporal schedule restrictions is considered grossly disproportionate to the negligible environmental benefit (and no change in residual risk) they may provide for Humpback Whales. Therefore, control measure has not been adopted for use.

	petroleum activity over multiple years (i.e. there is no 11-month consecutive period of a year for HVSC installation that does not coincide with cetacean migrations; Table 4-14). This extended duration would introduce new environmental risks. Given the low number of vessels within the OA associated with the HVSC installation, any change to approximate activity schedule (te activity schedule (Table 3-2) is not expected to result in a reduction of residual risk level.	
Petroleum activity schedule—Adjust to FCS and SCSt scopes to avoid predicted peak migration periods for Pygmy Blue Whales	The predicted peak migration periods in the Montebello Island region for Pygmy Blue Whales are May–June (northern) and November–December (southern) (Table 4-14). Scheduling the petroleum activity to avoid the predicted peak migration periods is not possible without extending the duration the petroleum activity over multiple years (i.e. there is no 8-month consecutive period of a year for SCSt installation and pre-commissioning that does not coincide with cetacean migrations; Table 4-14). This extended duration would introduce new environmental risks. The approximate schedule shown in Table 3-2 has also been designed such that the main complex/heavy installation scopes are undertaken during the more favourable metocean conditions (wet season; November to April) for operational and safety reasons. The predicted peak southern migration for Pygmy Blue Whales (November–December) occurs during the northern wet season. Studies indicate that the southern migration for Pygmy Blue Whales occurs further offshore (up to ~400 km from the coast) than the northern migration (Ref. 226). The FCS and SCSt are ~190–200 km from the mainland WA coast. Therefore the presence of southern migrating Pygmy Blue Whales would be expected further offshore than the OA and Sound EMBA. A change to the approximate activity schedule (Table 3-2) to avoid activities at the FCS and SCSt during to the predicted peak in southern migration for Pygmy Blue Whales is not expected to result in a significant reduction of residual risk	The cost of implementing temporal schedule restrictions is considered grossly disproportionate to the minor environmental benefit (and no significant reduction in residual risk) they may provide for Pygmy Blue Whales, and the potential increase in operational/safety risks. Therefore, control measure has not been adopted for use.

	level (i.e. would remain categorized as a 'low' risk).	
Adaptive management—Vessels under transit within the OA (during predicted peak migration period for Pygmy Blue Whales)	The predicted ensonified distance for behavioural response to Pygmy Blue Whales from a vessel under slow transit within the Jansz field is ~0.18 km (animat modelling for Scenario 7), and from a slow-moving cable lay vessel on DP near the FCS site is ~0.71 km, and on the continental shelf is ~0.72 km (animat modelling for Scenarios 3 and 4 respectively). The northern migration for Pygmy Blue Whales may include waters around the Jansz field (and within the migration BIA); the southern migration is expected to occur further offshore from the OA (Section 4.3.3.1.2). Increasing the separation distances for cetaceans (i.e. beyond the 300 m caution/approach zone required for whales under EPBC Regulations 2000) would reduce the likelihood of exposure of cetaceans to underwater sound at levels that may cause a behavioral effect. For vessels under transit within the OA during the predicted peak migration periods for Pygmy Blue Whales (i.e. May–June (northern) and November–December (southern); Table 4-14), an extended separation distance of 1 km (or to the field-of-view of the bridge-watch if this is <1 km) will be implemented.	The detection of Pygmy Blue Whales within the vicinity of vessel operations may lead to increased activity duration and overall costs. However, the benefit of reducing impacts to Pygmy Blue Whales is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.
Adaptive management—Vessels under transit within the OA (during predicted peak migration period for Humpback Whales)	The predicted ensonified distance for behavioural response to Humpback Whales from a slow-moving cable lay vessel on DP is ~2.47–3.34 km (animat modelling for Scenarios 1 and 2 respectively). The southern migration for Humpback Whales may include waters around Barrow Island (and within the migration BIA); the northern migration is expected to occur further offshore from the OA (Section 4.3.3.1.1). Increasing the separation distances for cetaceans (i.e. beyond the 300 m caution/approach zone required for whales under EPBC Regulations 2000) would reduce the likelihood of exposure of cetaceans to underwater sound at levels that may cause a behavioral effect. For vessels under transit within the OA during the predicted peak migration periods for Humpback Whales (i.e. July (northern) and September (southern); Table 4-14), an extended separation distance of	The detection of Humpback Whales within the vicinity of vessel operations may lead to increased activity duration and overall costs. However, the benefit of reducing impacts to Humpback Whales is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.

	3.5 km (or to the field-of-view of the bridge-watch where this is <3.5 km) will be implemented.	
Adaptive management—Vessels under transit within the OA (during predicted migration period for Whale Sharks)	The predicted ensonified distance for behavioural response to fish from a continuous sound source is up to hundreds of metres (Table 7-3). Increasing the separation distances for Whale Sharks (i.e. beyond the standard 30 m separation distance) would reduce the likelihood of exposure of Whale Sharks to underwater sound at levels that may cause a behavioral effect. For vessels under transit within the OA during the predicted migration period for Whale Sharks (i.e. July to November; Table 4-14), an extended separation distance of 500 m (or to the field-of-view of the bridge-watch where this is <500 m) will be implemented.	The detection of Whale Sharks within the vicinity of vessel operations may lead to increased activity duration and overall costs. However, the benefit of reducing impacts to Whale Sharks is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.
Adaptive management—Pre start-up visual observations for whales	The following adaptative measures will be implemented during installation activities: • pre start-up visual observation period – during daylight hours, visual observations for the presence of any whale will be undertaken prior to commencement of activities – activity can only commence within the OA if no whale has been observed within the field-of-view of the bridge-watch crew.	No additional personnel costs. However, the detection of whales may lead to increased activity duration and overall costs due to delayed start-ups of the activity. However, the benefit of reducing impacts to whales is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has 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. 89). 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. 89). 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 installation), the DP system is a critical safety device to avoid potential impact to existing subsea infrastructure, and therefore removing this would introduce a	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, control measure has not been adopted for use.

	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.	
Adaptive management—Slow moving and stationary vessels under DP (for activities occurring outside predicted peak migration periods for Pygmy Blue Whales)	As described above, shutting down the DP system on a vessel is not considered a practicable mitigation measure. Where a vessel is stationary or slow moving and operating under DP, the vessel will: • where practicable (given primary crew duties), the bridge-watch from the vessel/s will record observations for marine fauna within their field-of-view • if marine fauna are observed within the bridge-watch field-of-view, then: – the bridge-watch will continue to monitor the presence and movement of the marine fauna – if the marine fauna comes within the nominated separation distance, the vessel will where practicable, implement a mitigation maneuver (e.g. divert or slow vessel) if considered operationally safe and viable to do so. Marine fauna observations have been extended to the field-of-view of the bridge-watch in recognition that the predicted ensonified area for behavioural response to some marine fauna (e.g. cetaceans) may extend beyond the prescribed caution, approach, or separation distances for protected marine fauna.	No additional personnel costs. However, the detection of marine fauna may lead to increased activity duration and overall costs due to scope deviations. However, the benefit of reducing impacts to marine fauna is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.
Adaptive management—Slow moving and stationary vessels	The J-IC installation and pre-commissioning activities may overlap with the predicted peak Pygmy Blue Whale migration for the	Costs for engaging a Dedicated MFO are expected to be in the order of ~$800-1,000/day. For a ~60-day (two-month) peak migration period, this

under DP (for activities occurring during the predicted peak migration periods for Pygmy Blue Whales)	Montebello region (i.e. May–June (northern) and November–December (southern); Table 4-14). The FCS and SCSt are also located within a migration BIA for they Pygmy Blue Whale. In recognition of this temporal and spatial overlap, the following controls will be implemented for activities occurring within the migration BIA and during the predicted peak migration periods: • a Dedicated MFO will be on duty on the main installation vessel during daylight operations – the Dedicated MFO will record observations for marine fauna within their field-of-view • where practicable (given primary crew duties), the bridge-watch from other vessel/s will record observations for marine fauna within their field-of-view • if marine fauna are observed within the field-of-view, then: – the Dedicated MFO will continue to monitor the presence and movement of the marine fauna – if the marine fauna comes within the nominated separation distance, the vessel will where practicable, implement a mitigation maneuver (e.g. divert or slow vessel) if considered operationally safe and viable to do so.	would result in up to ~$120,000 in personnel costs (allowing for one Dedicated MFO on an FCS installation vessel, and one on a SCSt installation vessel). The use of MFOs and detection of cetaceans may lead to increased activity duration and overall costs due to scope deviations. However, the cost of a Dedicated MFO on the main installation vessel and the benefit of reducing impacts to Pygmy Blue Whales from anthropogenic noise within a BIA is considered to outweigh the financial costs from not implementing this control. Therefore, this control measure has been adopted for use.
Adaptive management—potential Pygmy Blue Whale foraging within a BIA	The predicted ensonified areas do not intersect with any Foraging Areas (annual high use, known, or possible) as defined within the *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 60). Based on proxy indicators, a recent study suggests that the 'most important areas' for foraging along the WA coast include discontinuous use of the shelf edge from Ningaloo Reef to Rowley Shoals (Ref. 87). The predicted ensonifed area for behavioural response to Pygmy Blue Whales during FCS and SCSt installation activities may extend up to 15.4 km and 13.1 km respectively. These predicted ensonifed areas for the installation activities associated with the FCS and SCSt do intersect	The detection of potential Pygmy Blue Whale foraging within the BIA may lead to increased activity duration and overall costs due to scope deviations. However, the benefit of reducing impacts to Pygmy Blue Whales from anthropogenic noise within a BIA is considered to outweigh the financial costs from not implementing this control. Therefore, control measure has been adopted for use.

	with part of these 'most important areas' for foraging. In accordance with Australian Government guidance (Ref. 85), activities occurring outside designated Foraging Areas must adopt adaptive management approaches should indicators of whale foraging be evident. The following adaptative measures will be implemented if installation activities occur within the Pygmy Blue Whale migration BIA during the predicted peak migration periods: • if the Dedicated MFO detects a PBW and monitoring indicates potential foraging behaviour (e.g. decreased speed and directionality), the vessel will where practicable, implement a mitigation option (e.g. divert or slow vessel) if considered operationally safe and viable to do so	
Likelihood and risk level summary		
Likelihood	Due to the nature and scale of the vessel activities within scope of this EP, the prediction of localised and temporary behaviour response, and the overlap with known BIAs for some fauna, the likelihood of exposing receptors resulting in the identified consequence was considered Seldom (3).	
Risk level	Low (7)	
Determination of acceptability		
Principles of ESD	The risk associated with this aspect is a localised and temporary behavioural response 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.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered applicable for this aspect include: • EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans • *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 60) • *Recovery Plan for Marine Turtles in Australia* (Ref. 56) • *Conservation Advice for the Whale Shark 2015–2020* (Ref. 57) • Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) (Ref. 302) • *Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)* (Ref. 303) • *North-west Marine Parks Network Management Plan* (Ref. 67). CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.	
	Requirement	**Demonstration**
	EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans	Requirements of Regulation 8.05 and 8.06 for vessels, and 8.07 for aircraft, interacting with cetaceans has been incorporated into the **EPBC**

	Caution and no approach zones for interacting with cetaceans from vessels. Vertical and horizontal distances for helicopter operations.	**Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans** control measure.
	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 Sound EMBA does not intersect with designated Foraging Areas for the Pygmy Blue Whale. The nearest foraging BIA is located offshore from North West Cape peninsula; and as such is not exposed to underwater sound emissions resulting from the petroleum activity. A recent study has indicated areas of probable foraging along the NWS based on proxy indicators (Section 4.3.3.1.2), and there is a small overlap with the Sound EMBA associated with installation activities for the FCS and SCSt. In accordance with Australian Government guidance (Ref. 85), activities occurring outside designated Foraging Areas must adopt adaptive management approaches should indicators of whale foraging be evident. Adaptive management control measures have been considered and adopted for use within this risk assessment. TTS and PTS from accumulated SEL_{24h} exposures to continuous sounds from vessels or helicopters is not predicted to occur. Therefore, continued use of the BIA without injury is expected. 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 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 from accumulated SEL_{24h} exposures to continuous sounds from vessels or helicopters is not predicted to occur. Therefore, continued use of habitat critical to the survival of a species and BIAs without displacement or disruption to biologically important behaviours is expected. 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)	N/A

<table>
<tr><td></td><td>No specific conservation action identified.</td><td></td></tr>
<tr><td></td><td>Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)
No specific conservation action identified.</td><td>N/A</td></tr>
<tr><td></td><td>North-west Marine Parks Network Management Plan 2018
The class approval for mining operations within a multiple use zone requires a NOPSEMA-accepted EP to be in place before activities commence.</td><td>This EP has been submitted to NOPSEMA for assessment.
Therefore, the petroleum activity is not considered to be inconsistent with the North-west Marine Parks Network Management Plan.</td></tr>
<tr><td>Internal context</td><td colspan="2">No CAPL management processes or procedures were deemed relevant for this aspect.</td></tr>
<tr><td>External context</td><td colspan="2">During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming:
intangible heritage, including songlines, 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.
No further objections or claims were raised regarding underwater sound emissions arising from the petroleum activity.</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 and risks in accordance with Table 5-3. In addition, the potential impacts and risks associated with the petroleum activity are not inconsistent with any recovery plan, conservation advice, or relevant bioregional plan.
However, in alignment with Section 5.6.2, 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><u>Recovery objective</u>: Minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list.
<u>Interim objective 4</u> Anthropogenic threats are demonstrably minimised.</td></tr>
<tr><td>Recovery Plan for Marine Turtles in Australia</td><td><u>Recovery objective</u>: 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.
<u>Interim objective 3</u>: Anthropogenic threats are demonstrably minimised.</td></tr>
<tr><td>North-west Marine Parks Network Management Plan 2018</td><td>As per Section 4.5.1</td></tr>
</table></td></tr>
</table>

	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 • no displacement of marine turtles from habitat critical to the survival of a species resulting from underwater sound from the petroleum activity • no disruption of biologically important behaviours of marine turtles within biologically important areas resulting from underwater sound from the petroleum activity • no adverse change to the values of the Montebello Marine Park. 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.	
Environmental performance outcomes	**Environmental performance standard**	**Measurement Criteria**
No injury to marine fauna from underwater sound emissions associated with the petroleum activity within the OA No displacement of marine fauna, or disruption of biologically important behaviours of marine fauna, from biologically important areas or habitat critical to the survival of a species from underwater sound emissions within the OA associated with the petroleum activity No adverse change to the values of Australian Marine Parks from the petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	**MSW process** CAPL will develop and implement SIMOPS Plan(s) to manage concurrent J-IC vessel activities when occurring within the same area.	Records demonstrate that a SIMOPS Plan for concurrent J-IC vessel activities was in place prior to the activity commencing, and was implemented for the duration of the activity
	MSW process Where a SIMOPS Plan is in place, it will include a communications protocol for sharing marine fauna observations	Records demonstration that a communication protocol was in place, and was implemented for the duration of the activity
	Vessels under transit within the OA Vessels under transit within the OA will implement caution zones, no approach zones, and separation distances where practicable: • caution zone (300 m either side of whales; 150 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	Induction materials include relevant marine fauna caution zone, no approach zone, and separation distance requirements Training records confirm offshore personnel involved in the petroleum activity have completed the induction Vessel records show if marine fauna interaction occurred within caution, approach or separation distance, and what mitigation (e.g. divert or slow vessel) measure was implemented

	Dugongs–vessels must operate at ≤6 knots when moving away to maintain these separation distances.	
	Vessels under transit within the OA (during predicted peak migration periods for Pygmy Blue Whales and Humpback Whales, and predicted migration periods for Whale Sharks) Vessels under transit within the OA will implement the following extended separation distance during predicted peak migration periods: • an extended separation distance of 1 km (or to the field-of-view of the bridge-watch if this is <1 km) for Pygmy Blue Whales during May–June and November–December • an extended separation distance of 3.5 km (or to the field-of-view of the bridge-watch if this is <3.5 km) from Humpback Whales during July and September • an extended separation distance of 500 m (or to the field-of-view of the bridge-watch if this is <500 m) from Whale Sharks during July to November.	Induction materials include relevant marine fauna caution zone, no approach zone, and separation distance requirements Training records confirm offshore personnel involved in the petroleum activity have completed the induction Vessel records show if marine fauna interaction occurred within caution, approach or separation distance, and what mitigation (e.g. divert or slow vessel) measure was implemented
	Helicopters under transit within the OA Helicopters will: • not operate at a height lower than 1,650 feet or within a horizontal radius of 500 m for a cetacean • not approach a cetacean from head on • maintain a separation distance of 500 m for Whale Sharks, Dugongs, and marine turtles.	Helicopter records show if marine fauna interaction occurred, and what mitigation (e.g. divert) measure was implemented
	Adaptive management—Pre start-up visual observations for whales During installation activities: • pre start-up visual observation period – during daylight hours, visual observations for the presence of whales will be undertaken prior to commencement of an activity – activity can only commence within the OA if no whales have been observed within	Records demonstrate that pre start-up visual observations were undertaken during installation activities

	the field-of-view of the bridge-watch crew.	
	Slow moving and stationary vessels under DP (for activities occurring outside predicted peak migration periods for Pygmy Blue Whales) Where a vessel is slow moving or stationary and operating under DP, the vessel will: • where practicable (given primary crew duties), the bridge-watch from the vessel/s will record observations for marine fauna within their field-of-view • if marine fauna are observed within the field-of-view: – the bridge-watch will continue to monitor the presence and movement of the marine fauna – if the marine fauna comes within the nominated separation distance, the vessel will where practicable, implement a mitigation maneuver (e.g. divert or slow vessel) if considered operationally safe and viable to do so.	Induction records show vessel bridge-watch crew were provided with marine fauna observations and reporting guidelines Records show that marine fauna observations were undertaken by bridge-watch crew when vessels were stationary or slow moving within the OA Vessel marine fauna sighting records show if marine fauna were observed what mitigation (e.g. divert or slow vessel) measure was implemented
	Slow moving and stationary vessels under DP (for activities occurring during predicted peak migration periods for Pygmy Blue Whales) Where a vessel is slow moving or stationary and operating under DP during the predicted peak periods for Pygmy Blue Whale migration (May–June, and November–December): • a Dedicated MFO will be on duty on the main installation vessel during daylight operations • the Dedicated MFO will will record observations for marine fauna within their field-of-view • where practicable (given primary crew duties), the bridge-watch from the other vessel/s will record supplementary observations for marine fauna within their field-of-view • if marine fauna are observed within the field-of-view: – the Dedicated MFO will continue to monitor the	Records show that a Dedicated MFO was always onboard the main installation vessel/s Records show that the Dedicated MFOs meet the training and competency requirements described in Table 8-2 Daily Dedicated MFO observation records and reports from the main installation vessel/s Records show that supplementary marine fauna observations were undertaken by bridge-watch crew when vessels were stationary or slow moving within the OA Vessel marine fauna sighting records show if marine fauna were observed what mitigation (e.g. divert or slow vessel) measure was implemented

	presence and movement of the marine fauna – if the marine fauna comes within the nominated separation distance, the vessel will where practicable, implement a mitigation maneuver (e.g. divert or slow vessel) if considered operationally safe and viable to do so.	
	Adaptive management—potential Pygmy Blue Whale foraging within a BIA Where a vessel is operating under DP within the Pygmy Blue Whale migration BIA during the predicted peak migration periods (May–June, and November–December): • if the Dedicated MFO detects a Pygmy Blue Whale^ and monitoring indicates potential foraging behaviour (e.g. decreased speed and directionality), the vessel will where practicable, implement a mitigation option (e.g. divert or slow vessel) if considered operationally safe and viable to do so	Vessel marine fauna sighting records show if indicators of Pygmy Blue Whale foraging within the BIA were observed what mitigation (e.g. divert or slow vessel) measure was implemented
	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) 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

^ *where the observation is of a positively identified Pygmy Blue Whale, or a large baleen whale that is considered likely to be a Pygmy Blue Whale*

7.7 Underwater sound—impulsive

Source
Activities identified as having the potential to result in impulsive underwater sound are: • installation—acoustic surveys (MBES and SSS) associated with the pre-, as-trench, and post-lay surveys, as well as during rock stabilisation • IMR— acoustic surveys (MBES and SSS).

Survey techniques are expected to emit various frequencies between 12 and 500 kHz (Ref. 77). Examples of sound levels emitted from the equipment include:

- MBES
  - SPL 218–221 dB re 1 µPa RMS @ 1 m (Ref. 78; Ref. 279)
  - per-pulse SEL 173–188 dB re 1 μPa^2s @ 1 m (Ref. 279)
- SSS
  - SPL 229–234 dB re 1 µPa RMS @ 1 m (Ref. 78; Ref. 279)
  - per-pulse SEL 200 dB re 1 μPa^2s @ 1 m (Ref. 279).

Potential impacts and risks

Impacts	C	Risks	C
Underwater sound emissions may result in:		A change in ambient underwater sound may result in:	
• localised and temporary change in ambient underwater sound.	6	• behavioural response	6
		• auditory impairment, TTS, PTS, recoverable or non-recoverable injury to marine fauna	–
		• changes to values and sensitivities of marine protected areas.	6
		• changes to cultural heritage values	6

Consequence evaluation

Localised and temporary change in ambient underwater sound

Anthropogenic underwater sound emitted during acoustic surveys will result in a temporary and highly localised change in ambient sound levels.

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 vocalising near simultaneously in reasonably close proximity to each other) (Ref. 86). 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. 86).

Survey techniques are expected to emit various frequencies between 12 and 500 kHz; with a maximum SPL up to ~234 dB re 1 µPa RMS @ 1 m for SSS (Ref. 279).

The duration of underwater impulsive sound emissions from acoustic surveys within the OA will vary with activity, ranging from ~2 consecutive days (during each rock dumping trip or for each pre- or post- lay survey) to up to ~21 consecutive days if used consistently during trenching activities to complete the as-trenched survey.

Given the details above, the consequence of acoustic surveys causing a change in ambient underwater sound has been assessed as Incidental (6) as it will result in limited changes that are very localised and short-term in nature.

Marine Mammals

Behavioural response

The noise effect criteria for marine mammals for behavioural response from impulsive sound is an SPL of 160 dB re 1 µPa (Ref. 278). Acoustic modelling undertaken for geophysical survey equipment in a sandy seabed environment predicted the maximum distance to reach this noise effect criteria from a MBES and SSS source was ~290 m and ~682 m respectively (Ref. 279).

Several marine mammal species have the potential to occur within the predicted ensonified area, including listed threatened and/or migratory low and mid frequency cetaceans, and sirenians. The predicted ensonified area for behavioural response also overlaps with a migration BIA for Humpback Whales and Pygmy Blue Whales. There are no other known areas of aggregation or biologically important behaviours for other cetacean species within the predicted ensonified area; as such it is expected that the presence of any marine mammal species would be of a transitory nature.

Given the indicative timing of the J-IC installation and pre-commissioning activities (i.e. from mid-2024 to mid-2026), there is the potential for overlap with the migration period for Humpback Whales. The part of the OA that intersects with the Humpback Whale BIA is associated with the installation of the HVSC. Studies (Ref. 223) suggest that northbound Humpback Whales tend to travel 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.

Similarly, there is the potential for overlap with the migration period for Pygmy Blue Whales. The part of the OA that intersects with the Pygmy Blue Whale BIA is associated with the installation of the HVSC (offshore extent only), FCS, and SCSt. The predicted ensonifed area also intersects with areas that have been identified as most important areas for Pygmy Blue Whale migration along the west coast. However, it is expected based on satellite tracking and acoustic detection studies that Pygmy Blue Whales are likely to travel further offshore than the defined BIA, particularly on their southern migration (November to December), but also during the northern migration (April to August) (Section 4.3.3.1.2).

The duration of underwater impulsive sound emissions from acoustic surveys within the OA will vary with activity, ranging from ~2 consecutive days (during each rock dumping trip or for each pre- or post- lay survey) to up to ~21 consecutive days if used consistently during trenching activities to complete the as-trenched survey.

Given the limited spatial and temporal exposures to marine mammals from underwater impulsive sound above the noise effect criteria for acoustic surveys, limited environmental impacts are expected to occur and therefore have been evaluated as Incidental (6).

PTS and TTS

The noise effect criteria for marine mammals for TTS and PTS from impulsive sound is an SEL_{24h} of 140–170 dB re 1 μPa^2s and 155–185 dB re 1 μPa^2s respectively depending on frequency hearing group (Ref. 79).

Acoustic modelling undertaken for geophysical survey equipment in a sandy seabed environment predicted the maximum distance to a per-pulse SEL for within these ranges was <20 m for MBES, and between <20 m and 31 m for SSS (Ref. 279). The modelling study also showed that for a 2.5 hour MBES survey, the accumulated SEL would not exceed an unweighted 171 dB re 1 μPa^2s more than 2 m from the source (Ref. 279). Similarly, for a 2.5 hour SSS survey, the accumulated SEL would not exceed an unweighted 171 dB re 1 μPa^2s more than 3 m from the source (Ref. 279).

Given the small predicted distances, and need for fauna to be exposed at these levels for extended durations before auditory impairments or injuries occur, TTS and PTS to marine mammals from acoustic survey techniques is not considered credible and is not evaluated further.

Marine reptiles

Seasnakes

The threatened Short-nosed Seasnake or Leaf-scaled Seasnake are not expected to be present within the Sound EMBA given known habitat preferences for shallow water and reef habitat; underwater sound has also not been identified as a threat for either species (Ref. 302; Ref. 303). Other EPBC marine listed seasnake species may occur in broader habitats within the NWMR, however noise pollution has not been identified as a pressure for seasnake species (Ref. 332). As such, underwater sound is not considered to be a significant factor in seasnake behaviour or survival.

Marine Turtles—Behavioural response

The noise effect criteria for marine turtles for behavioral response and behavioral response from impulsive sound is an SPL of 166 dB re 1 µPa (Ref. 81) and 175 dB re 1 µPa (Ref. 82; Ref. 83). Acoustic modelling undertaken for geophysical survey equipment in a sandy seabed environment predicted the maximum distance to reach these sound levels from a MBES and SSS source was ~71–290 m and ~257–682 m respectively (Ref. 279).

Several listed threatened and/or migratory marine turtle species have the potential to occur within the predicted ensonified area. The predicted ensonified area for also overlaps with a internesting buffer BIAs and habitat critical to the survival of a species for Flatback, Green and Hawksbill turtles.

Given the indicative timing of the J-IC installation and pre-commissioning activities (i.e. from mid-2024 to mid-2026), there is the potential for overlap with summer nesting seasons on Barrow Island. Green and Hawksbill turtles are known to nest on the west coast of Barrow Island, whereas Flatback Turtles nest on the east coast of the island (i.e. away from the OA and predicted ensonifed area). It is also noted that acoustic surveys will occur in waters >5.5 km

from Barrow Island, whereas studies suggest that Green and Hawksbill turtles prefer internesting within shallow waters and within 5 km of Barrow Island (Ref. 200).

The duration of underwater impulsive sound emissions from acoustic surveys within the OA will vary with activity, ranging from ~2 consecutive days (during each rock dumping trip or for each pre- or post- lay survey) to up to ~21 consecutive days if used consistently during trenching activities to complete the as-trenched survey.

Given the limited spatial and temporal exposures to marine reptiles from underwater impulsive sound above the noise effect criteria for acoustic surveys, limited environmental impacts are expected to occur and therefore have been evaluated as Incidental (6).

Marine Turtles—PTS and TTS

The noise effect criteria for marine turtles for TTS and PTS from impulsive sound is an SEL_{24h} of 189 dB re 1 μPa^2s and 204 dB re 1 μPa^2s respectively (Ref. 80).

Acoustic modelling undertaken for geophysical survey equipment in a sandy seabed environment predicted the maximum distance to a per-pulse SEL for within these ranges was <20 m for SSS; and that exposure was not predicted to occur from an MBES (Ref. 279).

Given the small predicted distances, and need for fauna to be exposed at these levels for extended durations before auditory impairments or injuries occur, TTS and PTS to marine turtles from acoustic survey techniques is not considered credible and is not evaluated further.

Fish including sharks and rays

Behavioural response

Impulsive sound sources have been identified as a high risk causing behavioural changes within the near vicinity of a sound source for all fish with no swim bladder or a bladder not involved in hearing; high at both near and intermediate vicinity for fish that use their swim bladder for hearing, and moderate for fish eggs and larvae within the near vicinity (Ref. 84). There is a low risk of causing masking behaviours for all fish groups from impulsive noise sources (Ref. 84).

Several fish species have the potential to occur within the predicted ensonified area, including listed threatened and/or migratory species. The predicted ensonified area for behavioural response also overlaps with a foraging BIA of Whale Sharks. A spawning ground for the EPBC Act listed conservation dependent Southern Bluefin Tuna also intersects with the Sound EMBA (Section 4.4.1.1). There are no other known areas of aggregation or biologically important behavious for other fish species within the predicted ensonified area; as such it is expected that the presence of any fish species would be of a transitory nature.

Given the indicative timing of the J-IC installation and pre-commissioning activities (i.e. from mid-2024 to mid-2026), there is the potential for overlap with the seasonal presence of Whale Sharks within the foraging BIA (July to November).

The duration of underwater impulsive sound emissions from acoustic surveys within the OA will vary with activity, ranging from ~2 consecutive days (during each rock dumping trip or for each pre- or post- lay survey) to up to ~21 consecutive days if used consistently during trenching activities to complete the as-trenched survey.

Given the limited spatial and temporal exposures to fish from underwater impulsive sound, limited environmental impacts are expected to occur and therefore have been evaluated as Incidental (6).

TTS

The noise effect criteria for marine turtles for TTS from impulsive sound is an SEL_{24h} of equal to or greater than 186 dB re 1 μPa^2s (Ref. 84).

Acoustic modelling undertaken for geophysical survey equipment in a sandy seabed environment predicted the maximum distance to a per-pulse SEL for within these ranges was <20 m for both MBES and SSS (Ref. 279).

Given the small predicted distances, and need for fauna to be exposed at these levels for extended durations before auditory impairments or injuries occur, TTS to fish from acoustic survey techniques is not considered credible and is not evaluated further.

Mortal or potential mortal injury, and recoverable injury

The noise effect criteria for marine turtles for recoverable injury and mortal or potential mortal injury from impulsive sound is an SEL_{24h} of 203–216 dB re 1 μPa^2s and of 207–219 dB re 1 μPa^2s respectively, depending on swim bladder hearing group (Ref. 84).

Acoustic modelling undertaken for geophysical survey equipment in a sandy seabed environment predicted that a per-pulse SEL at these levels was not predicted to occur (Ref. 279). As such a cumulative exposure is not credible and this type of impact is not evaluated further.

Changes to values and sensitivities of marine protected areas

The predicted ensonified area from the use of acoustic survey equipment overlaps with the Commonwealth Montebello Marine Park. The part of the ensonified area that overlaps with the marine park is associated with installation of the HVSC. The FCS and SCSt are located >50 km further offshore from the Montebello Marine Park.

The Montebello Marine Park is zoned as a Multiple Use Zone (IUCN VI), which is a zone "managed to allow ecologically sustainable use while conserving ecosystems, habitats and native species. The zone allows for a range of sustainable uses, including commercial fishing and mining where they are consistent with park values" (Ref. 67).

The natural values of this AMP include species listed as threatened, migratory, marine, or cetacean under the EPBC Act, as well as any identified BIAs for regionally significant marine fauna.

Potential impacts to the values of the Montebello Marine Park may occur due to impacts on marine fauna. The consequence evaluations to these receptors are provided above, and were risk assessed as Incidental (6). It is therefore expected that there would also be no long-term or significant impacts to the values of the Montebello Marine Park.

CAPL consider that the petroleum activity can be undertaken in a manner that is not inconsistent with the objectives of the *North-west Marine Parks Network Management Plan* (Ref. 67).

As such, CAPL has ranked the consequence for cultural values consistent with that for marine fauna, as Incidental (6).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was marine fauna (e.g. whales, dugongs, turtles; Table 4-15). The consequence evaluations to these receptors are provided above.

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 recognize as part of their cultural heritage" (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from the emission of impulsive sound within the OA is anticipated. The consequence evaluations to marine fauna are provided above, and were assessed as having a localised and limited environmental impact, and is not expected to affect the overall population of the species. Further, as described in the above evaluations, the source of impulsive sound emissions within the OA (i.e. geophysical survey equipment) is temporary and is not expected to affect the long-term underwater soundscape of the marine environment. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from underwater sound emissions within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from underwater sound emissions within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as Incidental (6).

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 relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in 'external context' below, and within appendix d).

Although some species that are known to be sensitive to underwater sound have the potential to be exposed to underwater sound 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.		
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 whales 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.	
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.	
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 the acoustic surveys within scope of this EP, the prediction for localised and temporary behaviour response, and the overlap with known biologically important areas for some fauna, the likelihood of exposing receptors resulting in the identified consequence was considered Unlikely (4).	
Risk level	Very low (9)	
Determination of acceptability		
Principles of ESD	The risk associated with this aspect is a localised and temporary behaviour response 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 Incidental (6). Therefore, no further evaluation against the Principles of ESD is required.	
Relevant environmental legislation and other requirements	Legislation and other requirements considered applicable for this aspect include: • EPBC Regulations 2000 – Part 8 Division 8.1 interacting with cetaceans • *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 60) • *Recovery Plan for Marine Turtles in Australia* (Ref. 56) • *Conservation Advice for the Whale Shark 2015–2020* (Ref. 57)	

- Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) (Ref. 302)
- *Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)* (Ref. 303)
- *North-west Marine Parks Network Management Plan* (Ref. 67).

CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.

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.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 Sound EMBA does not intersect with designated Foraging Areas for the Pygmy Blue Whale. The nearest foraging BIA is located offshore from North West Cape peninsula; and as such is not exposed to underwater sound emissions resulting from the petroleum activity. A recent study has indicated areas of probable foraging along the NWS based on proxy indicators (Section 4.3.3.1.2). The predicted ensonified areas from acoustic surveys does not intersect with these 'most important areas' for foraging. TTS and PTS is not predicted to occur for marine turtles; however some small (up to ~682 m from a source) area of potential behavioural response is possible. 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 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	Auditory impairment (TTS and PTS) is not predicted to occur for marine turtles; however some small (up to ~682 m from a source) area of potential behavioural response is possible. Studies indicate the Green and Hawksbill turtles (the species that nest on the east coast of Barrow Island) are more likely to stay in shallow waters within ~5 km of Barrow Island during their internesting period. As such, even though there is a small predicted overlap between the ensonifed area for behavioural response and the internesting habitat critical to the survival of a species, displacement from these areas is not predicted to occur. Therefore, this activity is not considered to be inconsistent with

<table>
<tr><td></td><td></td><td>the Recovery Plan for Marine Turtles in Australia.</td></tr>
<tr><td></td><td>Conservation Advice for the Whale Shark 2015–2020
No specific conservation action identified.</td><td>N/A</td></tr>
<tr><td></td><td>Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake)
No specific conservation action identified.</td><td>N/A</td></tr>
<tr><td></td><td>Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)
No specific conservation action identified.</td><td>N/A</td></tr>
<tr><td></td><td>North-west Marine Parks Network Management Plan 2018
The class approval for mining operations within a multiple use zone requires a NOPSEMA-accepted EP to be in place before activities commence.</td><td>This EP has been submitted to NOPSEMA for assessment.
Therefore, the petroleum activity is not considered to be inconsistent with the North-west Marine Parks Network Management Plan</td></tr>
<tr><td>Internal context</td><td colspan="2">No CAPL management processes or procedures were deemed relevant for this aspect.</td></tr>
<tr><td>External context</td><td colspan="2">During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming:
intangible heritage, including songlines, 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.
No further objections or claims were raised regarding underwater sound emissions arising from the petroleum activity.</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 and risks in accordance with Table 5-3. In addition, the potential impacts and risks associated with the petroleum activity are not inconsistent with any recovery plan, conservation advice, or relevant bioregional plan.
However, in alignment with Section 5.6.2, 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><u>Recovery objective</u>: Minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list.
<u>Interim objective 4</u> Anthropogenic threats are demonstrably minimised.</td></tr>
</table></td></tr>
</table>

	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.
	North-west Marine Parks Network Management Plan 2018	As per Section 4.5.1
	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 • no displacement of marine turtles from habitat critical to the survival or a species resulting from underwater sound from the petroleum activity • no disruption of biologically important behaviours of marine turtles within biologically important areas resulting from underwater sound from the petroleum activity • no adverse change to the values of the Montebello Marine Park. 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.	
Environmental performance outcomes	**Environmental performance standard**	**Measurement criteria**
No injury to marine fauna from underwater sound emissions associated with the petroleum activity within the OA No displacement of marine fauna, or disruption of biologically important behaviours of marine fauna, from biologically important areas or habitat critical to the survival of a species from underwater sound emissions within the OA	**EPBC Regulations 2000 – Part 8 Division 8.1 – Interacting with cetaceans** Survey vessels will implement caution and no approach zones, where practicable: • caution zone (300 m either side of whales and 150 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 front and rear of dolphins and 50 m either side;)–vessels should not enter this zone, and should not wait in front of	Induction materials include relevant marine fauna caution and no approach zone requirements Training records confirm personnel involved in offshore vessel 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

associated with the petroleum activity No adverse change to the values of Australian Marine Parks from the petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	the direction of travel or an animal or pod, or follow directly behind.	
	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

7.8 Invasive marine pests

Source

Activities identified as having the potential to result in the introduction of an invasive marine pest (IMP) are:

- installation—presence of biofouling on subsea equipment used within the OA
- field support—planned discharged of ballast water or the presence of biofouling on vessels undertaking 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
		• changes to cultural heritage values	6

Consequence evaluation

Displacement of, or compete with, native species

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. 111).

IMPs primarily occur in shallow waters with high levels of slow-moving or stationary shipping traffic (such as ports). The probability of successful IMP settlement and recruitment decreases in deep ocean waters away from coastal habitats or shallow benthic habitats. IMP colonisation also requires a suitable habitat in which to establish itself, such as rocky and hard substrates, or subsea infrastructure. The Australian Government Bureau of Resource Sciences (BRS) established that the relative risk of an IMP becoming established around Australia decreases with

distance from the coast. Modelling conducted by BRS (Ref. 112) estimates that the median risk of establishment[43] at 3 nm, 12 nm and 24 nm is ~40%, ~28%, and ~9% respectively.

The OA is in waters ranging ~25–1,350 m, and as such low light levels are expected at the seabed, particularly in the further offshore areas of the OA. The OA is also located >5 km offshore from the closest island (Barrow Island), and >85 km (>45 nm) from the mainland coast and large ports.

The values and sensitivities within the OA with the potential to be impacted by the introduction of a marine pest include the following KEFs:

- ancient coastline at 125 m depth contour
- continental slope demersal fish communities

Although KEFs have been identified as having the potential to be exposed, as described in Section 4.3.1.1, the benthic habitats within the OA mostly comprise unvegetated, soft, and unconsolidated sediments. Recent survey over parts of the Jansz pipeline showed the predominant benthic habitat was bare substrate, with either a smooth (mostly flat) or irregular (mostly flat with minor features) surface (Ref. 262). The only area identified as a high likelihood of biota being present was some patches over the scarp (Ref. 262). The study also indicated that habitat within the ancient coastline at 125 m depth contour KEF in proximity to the OA consisted of smooth seabed with bioturbation and appeared devoid of biota (Ref. 262; Table 4-16). Similarly habitat within the continental slope demersal fish communities KEF in proximity to the OA comprise irregular and smooth seabed with bare substrates, discrete depressions of bare substrate, and scarps with bare substrate, were the most dominant benthic features (Ref. 262; Table 4-16).

The location of the OA, and the benthic habitat within the OA, is not likely to be suitable for IMP establishment. The OA is in water depths of ~25–130 m, is located offshore from the mainland coast and large ports, and the seabed is dominated by soft sediments such as sand and clay. Thus, the more favourable requirements of expansive hard substrate and sufficient light for IMP survival are not common within the OA.

Once established, some IMPs can be difficult to eradicate (Ref. 113) 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. 114; Ref. 115; Ref. 116; Ref. 117). Although marine pests are identified as being of concern to marine reptile species under the *North-west Marine Bioregional Plan* (Ref. 88), the risk is associated with terrestrial based IMPs 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.

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was the ocean (Table 4-15) —consequence evaluations to related receptors are provided above.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from an unplanned introduction and establishment of an IMP within the OA is anticipated. The consequence evaluation to benthic communities and habitats is provided above; where if an IMP was introduced and was successful in colonising the area, was assessed as a wide-spread long-term impact. However, as described in the above evaluation, given the benthic habitats present within the OA and the distance from mainland coasts and ports, the OA is not likely to be suitable for IMP establishment. As such, it is

[43] In this context, establishment refers to an organism being able to find suitable habitat and survive.

anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from the introduction and establishment of an IMP within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as Incidental (6).

ALARP decision context justification

Offshore commercial vessel operations, and subsequent planned discharges, are commonplace and well-practiced locally, nationally, and internationally.

The causes resulting in an introduction of an IMP from a planned release of ballast water or hull or equipment 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.

During relevant persons consultation, claims were received regarding biosecurity risks arising from the petroleum activity, and the risk of disruption to songlines. These claims were responded to by CAPL (see summary in 'external context' below, and within appendix d).

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

Control measure	Description
Quarantine procedure	CAPL's *Quarantine Procedure Marine Vessels* (*Ref. 41*) 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: • ballast water management in line with the *Australian Ballast Water Management Requirements* (Ref. 9) • undertaking biofouling risk assessments in line with the with the *National Biofouling Management Guidance for the Petroleum Production and Exploration Industry* (Ref. 12) and DPIRD 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. 11) and *Australian Biofouling Management Requirements* (Ref. 10). As described in Section 8.3.3.2, all vessels operating in title areas must comply with applicable Australian biofouling and ballast water requirements to prevent the introduction and spread of marine pests. The quarantine procedure requires that all vessels complete and submit to CAPL a *Quarantine Questionnaire – Marine Vessels*, of which Section 3 addresses ballast water and Section 4 addresses biofouling, including that all relevant biofouling information (e.g. Biofouling Management Plan, Biofouling Record Book, evidence of last vessel clean to remove biofouling. Antifouling certificates, etc.) is provided to enable suitable risk assessments to be completed prior to vessel mobilisation to a title area. Once CAPL are satisfied that the vessel meets marine quarantine requirements, CAPL will issue authorization to mobilise via the *Quarantine Certificate – Vessel Mobilisation*.
Ballast water management	The *Australian Ballast Water Management Requirements* (Ref. 9) 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.
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. In accordance with the *Australian Biofouling Management Requirements* (Ref. 10), from 15 June 2022, all operators of vessels intending to enter Australian territorial waters must also provide information relating to biofouling management as part of the pre-arrival reporting via MARS.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.

Additional control measures and cost-benefit analysis		
Control Measure	**Benefit**	**Cost**
N/A	N/A	N/A

Likelihood and risk level summary	
Likelihood	As vessel and installation activities are occurring within areas that are unlikely to provide benthic habitat suitable for IMP establishment, 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 benthic habitats within or in close proximity to the OA.
Risk level	Low (7)
Determination of acceptability	
Principles of ESD	The potential risks associated with this aspect is a widespread long-term impact to benthic 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. 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)*

<table>
<tr><td>other requirements</td><td>

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. 9)
Australian Biofouling Management Requirements (Ref. 10)
Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Biofouling Guidelines) MPEC.207(62)) 2011 (Ref. 11)
National Biofouling Management Guidance for the Petroleum Production and Exploration Industry (Ref. 12)
North-west Marine Parks Network Management Plan (Ref. 67).

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>Biosecurity Act 2015 (Cth)
Pre-arrival reporting through MARS</td><td>Requirement for pre-arrival reporting has been incorporated into the MARS control measure.</td></tr>
<tr><td>Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 (Cth)
Gives effect to Marine Order 98</td><td>Anti-fouling certifications (as per Division 2) have been incorporated into the anti-fouling certificate control measure</td></tr>
<tr><td>Australian Ballast Water Management Requirements
Best practice guidance for ballast water management within Australian seas, including legislative obligations under Biosecurity Act 2015 (Cth)</td><td>Requirement for ballast water exchange has been incorporated into the ballast water management control measure
Proactive management of ballast water (e.g. use of ballast water management plan) has been incorporated into the quarantine procedure control measure</td></tr>
<tr><td>Australian Biofouling Management Requirements
Best practice guidance for biofouling management within Australian seas, including legislative obligations under Biosecurity Act 2015 (Cth)</td><td>Requirement for pre-arrival reporting has been incorporated into the MARS control measure
Proactive management of biofouling (e.g. use of biofouling management plan) has been incorporated into the quarantine procedure control measure</td></tr>
<tr><td>Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Biofouling Guidelines)
A biofouling management plan and record book to be available and maintained</td><td>Proactive management of biofouling (e.g. use of biofouling management plan) has been incorporated into the quarantine procedure control measure</td></tr>
<tr><td>National Biofouling Management Guidance for the Petroleum Production and Exploration Industry
Undertake a biofouling risk assessment</td><td>Biofouling risk assessments for vessels have been incorporated into the quarantine procedure control measure</td></tr>
<tr><td>North-west Marine Parks Network Management Plan
The Plan requires that "[b]allast water discharge and exchange must be compliant with Australian ballast water management requirements administered by the</td><td>The Montebello Marine Park is a multiple use zone (IUCN VI). The control measures identified for the management of ballast water are in accordance with Australian requirements, and therefore also in accordance with the requirements of</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>Australian Maritime Safety Authority”.</td><td>the multiple use zone of an Australian Marine Park.</td></tr>
<tr><td>Internal context</td><td colspan="2">This CAPL environmental management process or procedure was deemed relevant for this aspect:
• Quarantine Procedure Marine Vessels (Ref. 41).
Control measures related to each of the above management processes or procedures have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.</td></tr>
<tr><td>External context</td><td colspan="2">During relevant persons consultation, a claim regarding minimising the biosecurity risks from infrastructure and materials to be installed was received (appendix d). CAPL provided a response that included:
• subsea infrastructure that are manufactured overseas, are transported to Australia dry (i.e. this should not present a pathway for introduction of an IMP)
• the rock used for secondary stabilisation within the Barrow Island Marine Quarantine Controlled Access Zone has control measures in place to minimise the biosecurity risk to Barrow Island[44]
• the predominant focus for risk management for this EP is on biofouling and ballast water from vessels, which are addressed via control measures based on implementing CAPL’s Quarantine Procedure Marine Vessels (Ref. 41) and legislative requirements (e.g. Biosecurity Act 2015 [Cth]) that are included in the EP.
A claim regarding the risk of disruption to songlines was also received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation.
No further objections or claims were raised regarding IMPs arising from the petroleum activity.</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 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 5.6.2, 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>North-west Marine Parks Network Management Plan 2018</td><td>As per Section 4.5.1</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:
• no adverse change to the values of the Montebello Marine Park.
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 biofouling and ballast water, that the risk to values of the AMP are also subsequently managed.</td></tr>
</table>

[44] Note: rock stabilisation within this quarantine zone occurs as part of the State EP (i.e. *Gorgon and Jansz Feed Gas Pipeline: Umbilicals Installation Environment Plan [*Ref. 6]), and is not within the scope of this EP (Section 2.3).

Environmental performance outcome	Environmental performance standard	Measurement criteria
No introduction and establishment of invasive marine pests within the OA due to the petroleum activity No adverse change to the values of Australian Marine Parks from the petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	**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: • *Quarantine Questionnaire – Marine Vessels* has been completed and submitted to CAPL • biofouling risk assessments are completed • biofouling management plans and/or biofouling record books are available.	*The Quarantine Certificate – Vessel Mobilisation* issued by CAPL confirm that relevant vessels meet requirements of the *Quarantine Procedure Marine Vessels*
	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*
	Anti-fouling 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 Convention on the Control of Harmful Anti-fouling Systems on Ships	Inspection reports confirm that international antifouling coating certifications are up-to-date
	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)
	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)	As required, records show that the MoC process was undertaken in response to any

	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	new information on cultural values or features within the OA or EMBA

7.9 Planned discharges—surface

Source

Activities identified as having the potential to result in planned discharges are:

- installation—FCS operations during installation and pre-commissioning
- field support—vessel operations during the petroleum activity (including installation and pre-commissioning, or IMR activities) within the OA.

The types of planned discharges from vessels include deck wash-water, fire-fighting foam, sewage, greywater, food wastes, cooling water, and oily bilge water.

As described in Section 3.2.1, sewage (macerated, but untreated) and grey water may be discharged while the FCS is attended during pre-commissioning, commissioning, and start-up, as well as during any campaign maintenance.

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 • changes to cultural heritage values	6 6

Consequence evaluation

Localised and temporary reduction to water quality

Open marine waters are typically influenced by regional wind and ocean currents resulting in the mixing of surface and near-surface waters—where vessel discharges would occur (Ref. 101). Discharges from the vessels and FCS 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. 101). This outcome was verified by sewage discharge monitoring for another offshore project (Ref. 68), 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 exceed volumes expected during vessel operations. Therefore, the extent of impacts is expected to be localised to the discharge location.

Discharge of untreated sewage can create a health hazard, however given the volumes and expected dilution and dispersion upon release, this is not expected to occur. The FCS is also located >100 km (>54 nm) from a coast, which is much greater than the minimum >12 nm requirement for a vessel to discharge untreated sewage when en route.

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. 68).

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 minimized 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 or the FCS may lead 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. 102; Ref. 103). 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. 104; Ref. 105) and further dilution of the foam mixtures in dispersive aquatic environments may then occur before there is any substantial demand for dissolved oxygen (Ref. 106).

Consequently, CAPL believes that the change in water quality from these standard discharges is limited to a localized 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.

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 or habitat critical to the survival of a species also overlap with the OA. 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. 101).

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. 107) 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 localized, typically returning to background conditions within tens to a few hundred metres of the discharge location (Ref. 108; Ref. 109; Ref. 110).

As described above, plankton communities are not affected by sewage discharges, but if they are, such effects would be highly localized (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 localized impacts to species. Any increased predation is not expected to result in more than a limited environmental impact; therefore, the consequence is Incidental (6).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was the ocean and marine fauna (Table 4-15)—consequence evaluations to related receptors (i.e. marine environmental quality, marine fauna) are provided above.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from planned surface discharges within the OA is anticipated. The consequence evaluation to marine fauna is provided above, and were assessed as having a localised and limited environmental impact, and is not expected to affect the overall population of the species. Further, as described in the above evaluations, the source (i.e. FCS or vessels) and type (i.e. related to installation, pre-commissioning, or IMR activities) of planned surface discharges within the OA are temporary and intermittent, and are not expected to affect the long-term environmental quality of the ocean. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from planned surface discharges within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from planned discharges within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as 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 relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in 'external context' below, and within appendix d).

The impacts and risks associated with these discharges are lower-order impacts and risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect. However, as this aspect is listed as a key threat to protected matters under documents made or implemented under the EPBC Act, and can result in a credible impact or risk, additional control measures were also considered.

Good practice control measures

Control measure	Description
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. 37).
MARPOL 73/78	Prior to commencement of the petroleum activity, Chevron's OVIS assessment requirements within *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) are used to verify that all vessels will comply with relevant Marine Orders (as appropriate to vessel class) for discharges, including: • Marine Order 96—Marine Pollution Prevention—sewage, which gives effect to MARPOL 73/78 Annex IV and the conditions under which sewage can be discharged to the environment[45] • Marine Order 95—Marine pollution prevention—garbage, which gives effect to MARPOL 73/78 Annex V and the conditions under which macerated and unmacerated food waste can be discharged to the environment • Marine Order 91—Marine pollution prevention—oil, which gives effect to MARPOL 73/78 Annex I and the conditions under which oily bilge is authorized to be discharged to the environment. MARPOL is the International Convention for the Prevention of Pollution from Ships and is aimed at preventing both accidental pollution and pollution from routine operations.
Relevant persons consultation—Ongoing consultation (First	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 8.3.4)

[45] Note: The MARPOL Annex IV regulations that apply to the installation vessels and the FCS are different.

Nations people and/or representative bodies)	CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.	
Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
Selection of fire-fighting foam for use on FCS	Formulations of aqueous fire-fighting foams can contain fluorinated surfactants. Finished fluorosurfactant foams are generally rather non-toxic; however, it is their polyfluorinated degradation products that are of environmental concern because of unfavourable persistence, bioaccumulation and toxicity (Ref. 343). As described in Section 3.2.1, the FCS has open-drainage, and as such any use of fire-fighting foam (e.g. during testing, or in event of emergency) would result in a discharge to the open ocean. Selection of a fire fighting foam without fluorinated surfactants removes the potential impacts associated with their persistence presence in the environment.	The cost of selecting a non-fluorosurfactant fire fighting foam for use on the FCS is not considered grossly disproportionate to the potential environmental benefit gained. Therefore, this control measure has been adopted for use.
Likelihood and risk level summary		
Likelihood	Given the nature and scale of this activity with standard control measures in place, it is considered Rare (6) that these discharges would result in any impact to the ecological function of the 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 broader 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	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 • *North-west Marine Parks Network Management Plan* (Ref. 67).	

<table>
<tr><td></td><td colspan="2">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>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></td><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></td><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>
<tr><td></td><td>North-west Marine Parks Network Management Plan 2018
The Plan requires that “waste from normal operations of vessels must be compliant with requirements under the International Convention for the Prevention of Pollution from Ships (MARPOL), the International Maritime Organisation (IMO) convention covering prevention of pollution of the marine environment by ships from operational or accidental causes”.</td><td>The Montebello Marine Park is a multiple use zone (IUCN VI). The control measures identified for the management of planned discharges from vessel operations are in accordance with MARPOL requirements, and therefore also in accordance with the requirements of the multiple use zone of an Australian Marine Park.</td></tr>
<tr><td>Internal context</td><td colspan="2">These CAPL management processes or or procedures were deemed relevant for this aspect:
• Hazardous Materials Management Procedure (Ref. 37)
• Marine Standard Non Tankers: Corporate OE Standard (Ref. 36).
Control measures related to each of the above management processes or procedures have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.</td></tr>
<tr><td>External context</td><td colspan="2">During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation.
No further objections or claims were raised regarding planned discharges from vessel or FCS operations arising from the petroleum activity.</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 and risks 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 5.6.2, 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.</td></tr>
</table>

<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>North-west Marine Parks Network Management Plan 2018</td><td>As per Section 4.5.1.</td></tr></table></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:
• vessel discharges are compliant with MARPOL requirements
• no adverse change to the values of the Montebello Marine Park.
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 planned vessel discharges, that the risk to values of the AMP are also subsequently managed.</td></tr>
<tr><th>Environmental performance outcome</th><th>Environmental performance standard</th><th>Measurement criteria</th></tr>
<tr><td rowspan="3">Planned discharges from vessel operations within the OA during the petroleum activity will meet MARPOL requirements</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
• 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.</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>
<tr><td>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.</td><td>Records show food waste is discharged in accordance with MARPOL 73/78 Annex V</td></tr>
<tr><td>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</td><td>Records show oily bilge water is discharged in accordance with MARPOL 73/78 Annex I, including current International Oil Pollution Prevention (IOPP) Certificate</td></tr>
</table>

	• when the marine vessel is en route.	
Planned discharges from FCS operations within the OA during the petroleum activity will meet MARPOL requirements	**MARPOL 73/78 sewage discharge** Discharge of sewage from the FCS within the OA will be in accordance with MARPOL 73/78 Annex IV requirements, specifically: • untreated sewage discharged ≥12 nm from the nearest land.	Records show sewage is discharged from the FCS in accordance with the relevant requirements of MARPOL 73/78 Annex IV.
No impacts to marine habitats or marine fauna outside of the OA from surface discharges during the petroleum activity	**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)
	Selection of fire-fighting foam for use on FCS Fire-fighting foams selected for use on the FCS will be fluorine free	Records show that the fire-fighting foam stored on the FCS is fluorine free
No adverse change to First Nations 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

7.10 Planned discharges—subsea

Source
Activities identified as having the potential to result in planned subsea discharges are: • installation—potential displacement of MEG from spools or SCSt piping; potential release of production fluids during tie-in to existing Jansz infrastructure; potential release of treated seawater (e.g. including biocide, corrosion inhibitor, etc.) from FCS ballast; acid wash or similar cleaning agent used to clean subsea infrastructure • IMR—acid wash or similar cleaning agent used to clean subsea infrastructure

- pre-commissioning—discharge of MEG, fluorescein dye, and barrier fluids during testing.

Potential impacts and risks

Impacts	C	Risks	C
Planned subsea operational discharges may result in: • localised and temporary reduction in water quality.	6	A change in ambient water quality may result in: • alteration to benthic communities and habitats • changes to cultural heritage values	6 6

Consequence evaluation

Localised and temporary reduction in water quality

The release of minor quantities of MEG, production fluids, acid-water mix, fluorescein dye, and barrier fluids during installation and pre-commissioning or IMR activities will result in a localised and temporary reduction in water quality around the discharge point.

These discharges are intermittent, non-continuous, and of short duration, and as such frequency of exposure is limited. The discharges are planned to occur in the deep offshore waters (>1,200 m) at the Jansz field.

Discharge of small volumes of these fluids are predicted to disperse and dilute while mixing through the water column. The spatial extent is likely to be limited to the water column, and only in a range of meters from the discharge point.

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).

Alteration to benthic communities and habitats

Subsea 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 new J-IC infrastructure, within the deep waters of the Jansz field. An indirect impact to benthic communities and habitats may occur through toxicity impacts.

As described in Section 4.3.1.1, benthic habitats within the OA mostly comprise unvegetated, soft, and unconsolidated sediments. Recent survey over parts of the Jansz pipeline showed the predominant benthic habitat was bare substrate, with either a smooth (mostly flat) or irregular (mostly flat with minor features) surface (Ref. 262). The only area identified as a high likelihood of biota being present was some patches over the scarp (Ref. 262); this does not coincide with where planned subsea discharges will occur.

The largest volume of subsea discharges are associated with MEG (estimated to be a cumulative volume of ~500 m^3 during installation and pre-commissioning). However, these discharges will occur as multiple smaller and discrete discharges during the installation and/or tie-in of individual components (sliding spools, SCSt modules, and seabed spools). The aquatic toxicity of MEG is very low, has a low bioaccumulation potential, and it 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. Concentrated MEG is weakly negatively buoyant, however is not expected to accumulate in sediments.

Similarly, the barrier fluids used will be a water-based hydraulic fluid with low toxicity and is not known to bioaccumulate; and are therefore not expected to result in adverse impacts to habitats or fauna. Barrier fluids are also weakly negatively buoyant. The estimated cumulative volume of barrier fluid discharges is ~2 m^3; noting the discharges occur as multiple smaller and discrete discharges during the pre-commissioning of SCSt modules.

The estimated cumulative volume of production fluid discharges is ~0.5 m^3; noting the discharges actually occur as multiple smaller and discrete discharges during the tie-in of the J-IC spools to the existing Jansz MPTS. Jansz production fluids (refer to Section 7.16.2.1 for discussion on characteristics of Jansz condensate) will be buoyant and will rapidly rise and mix through the water column. As such they are not expected to result in adverse impacts to habitats or fauna.

Given the rapid dilution and dispersion conditions of the open ocean, and intermittent, non-continuous, and of short duration of discharges, adverse impacts the existing benthic communities and habitats are not expected. Consequently, the release of subsea discharges are

expected to result in a limited environmental impact to benthic communities and habitats, and the consequence level was determined as Incidental (6).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was the ocean (Table 4-15)—consequence evaluations to related receptors (i.e. marine environmental quality, benthic communities and habitats) are provided above.

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 recognize as part of their cultural heritage" (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from planned subsea discharges within the OA is anticipated. The consequence evaluation to marine environmental quality and benthic habitats and communities are provided above, and were assessed as having a localised and limited environmental impact. Further, as described in the above evaluations, the source of planned discharges within the OA (i.e. installation, pre-commissioning, or IMR activities) are temporary and intermittent, and are not expected to affect the long-term environmental quality of the ocean. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from planned subsea discharges within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from planned discharges within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as Incidental (6).

ALARP decision context justification

Subsea discharges associated with the installation 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 relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in 'external context' below, and within appendix d).

The impacts and risks associated with these discharges are 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

Control measure	Description
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. 37)
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.	
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 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 legislation or other requirements were considered relevant to this aspect.	
Internal context	This CAPL management process or procedure was deemed relevant for this aspect: • *Hazardous Materials Management Procedure* (Ref. 37). Control measures related to the above management procedure have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.	
External context	During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation. No further objections or claims were raised regarding planned subsea discharges arising from the petroleum 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	**Environmental performance standard**	**Measurement criteria**
No impacts to marine habitats, or marine fauna outside of the OA from subsea	**Hazardous materials selection process** Subsea fluids planned for discharge are subject to the hazardous materials selection process as per the CAPL	Hazardous materials selection process assessment records (or similar)

discharges during the petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	*Hazardous Materials Management Procedure*	
	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

7.11 Electromagnetic emissions

Source

Activities identified as having the potential to result in the generation of an electromagnetic field include:

- pre-commissioning—testing of the HVSC, start-up and operation of the HVSC.

Potential impacts and risks

Impacts	C	Risks	C
N/A	-	An electromagnetic field may result in:	
		• behavioural disturbance of marine fauna	6
		• changes to cultural heritage values	6

Consequence evaluation

Behavioural disturbance of marine fauna

While in use, the HVSC will generate a small electromagnetic field (EMF). The field strength produced as a result of the operation of electricity transmission decreases rapidly with distance away from the source (the decay curve follows the inverse square law; Ref. 251).

Previous modelling studies indicate that EMFs are limited spatially (both vertically and horizontally); however, are likely to reach at minimum up to a number of meters in the water column, possibly more (Ref. 294). Previous modelling of the magnetic fields from a 132kV cable and found that the EMF (B field) decreased to background levels within 20 m of the cable (Ref. 295). Given that the HVSC is either rock-dumped or trenched within waters shallower of ~100 m (Figure 3-2) this is expected to further reduce the EMF (by increasing the distance between the EMF source and any receptors) in these areas.

Magnetic and/or electric receptors have been reported for a wide range of taxa (Ref. 253). Many organisms, including elasmobranchs, some bony fish, decapods, marine mammals and turtles can detect both natural and artificial electric and/or magnetic fields and use them to navigate, orientate, and sense prey, mates and predators (Ref. 296; Ref. 297).

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 or habitat critical to the survival of a species also overlap with the OA, including:

- Humpback Whale (migration BIA)
- Pygmy Blue Whale (migration BIA)

- Flatback Turtle, Green Turtle, Hawksbill Turtle (internesting buffer BIA, internesting habitat critical to the survival of a species)
- Whale Shark (foraging BIA).

A spawning ground for the EPBC Act listed conservation dependent Southern Bluefin Tuna also intersects with the OA (Section 4.4.1.1).

Collins (Ref. 251) and Michel et al (Ref. 252) concluded that EMF may cause very localised disturbance within metres of the cable.

Given the HVSC is situated on the seabed in water depths of ~25–1,290 m, EMF exposure would require the cetacean to either be demersally foraging or diving within very close (~20 m) proximity of the HVSC. Most of the cetacean species that may occur within the OA (including Humpback Whales) are epipelagic species that are unlikely to demersally forage; however some species (such as Pygmy Blue Whales are known to feed and dive at depth) (Ref. 298).

The anticipated EMF emitted from the HVSC would be unlikely to have a significant impact (i.e. physiological or behavioural) to most bony fish, particularly when consideration is given to the high mobility of the species (Ref. 298). Fish embryos may be influenced by low level EMFs; although the levels at which these effects are found are generally much larger than that expected to be generated by the HVSC (Ref. 294; Ref. 298). The approximate spawning ground for Southern Bluefin Tuna extends between Java and northern WA, covering an area of ~1,850,534 km^2. The part of the OA that intersects with this spawning ground is predominantly associated with the installation of the FCS and SCSt; only ~3.5 km of HVSC intersects with this spawning ground (and occurs in waters >1,250 m deep). Spawning for Southern Bluefin Tuna typically occurs near the water surface. Given the water depths and the small (i.e. within metres) predicted disturbance radius of the EMF of the HVSC, potential impacts to Southern Bluefin Tuna embryos is not anticipated.

Cartilaginous fish can use electroreception for orientation and navigation, detection of prey, detection of conspecifics, and potential predators (Ref. 294; Ref. 298). Sharks use E and/or B fields as their primary mode of locating food, finding mates, and navigating (Ref. 298). Whale Sharks are known to spend considerable time close to the surface. Whale Sharks tagged off WA (Ref. 65, Ref. 66) spent ~25% of their time <2 m from the surface and >40% of their time in the upper 15 m of the water column. The Whale Shark BIA is situated along the 200 m. Given Whale Sharks preference to remain in the upper layers of the water column, exposure to an EMF field from the seabed is expected to have limited effect on foraging effort or ability.

Studies have demonstrated that turtles have magnetosensitivity and behavioural responses to field intensities for Loggerhead and Green turtles (Ref. 253). While the HVSC occurs within internesting BIAs and internesting habitat critical to the survival of marine turtles (Section 4.3.3.2), high use of the OA as internesting habitat is not expected by any of the species (Green, Hawksbill, or Flatback turtles) given their internesting habitat preference for shallower nearshore areas. With consideration given to the HVSC profile and stabilisation techniques (rock dumping and trenching), the anticipated B field emitted from the HVSC is likely to have a negligible impact to migration and orientation movements of the marine turtle species (Ref. 298).

Given the predicted small disturbance radius of the EMF (i.e. within metres) of the HVSC, significant adverse effects to marine fauna behaviour are not expected to occur. Within the shallower waters (<100 m) of the OA, the HVSC is either trenched or rock dumped, thereby further reducing the distance of EMF into the ocean. In areas where the HVSC is exposed there may be a localised change in the EMF and this may cause a very localised and temporary behavioural responses to fauna within close proximity to the HVSC, however the worst case response identified is minor movement deviation (Ref. 253). As such, CAPL has ranked the consequence associated this risk as Incidental (6).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was marine fauna (Table 4-15)—consequence evaluations to these receptors are provided above.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15).

Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from electromagnetic emissions within the OA is anticipated. The consequence evaluation to marine fauna is provided above, and were assessed as having a localised and limited environmental impact, and is not expected to affect the overall population of the species. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from electromagnetic emissions within the OA.

Given the predicted small disturbance radius of the EMF (i.e. within metres) of the HVSC, a significant adverse change to cultural values attributed to the offshore marine area from unplanned seabed disturbance is not predicted to occur. As such, CAPL has ranked the consequence for cultural values as Incidental (6).

ALARP decision context justification

Anthropogenic sources of EMFs are becoming increasingly common in the marine environment and are generally a result of offshore infrastructure, including subsea power cables.

During relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in 'external context' below, and within appendix d).

The risks associated with seabed disturbance 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

Control measure	Description
Cable design	EMFs exist wherever electric current flows, the types of EMFs generated by electrical cables are classified as extremely low frequency E and B fields. The field strength decreases rapidly with distance away from the source (the decay curve follows the inverse square law). The occurrence of electric fields may be controlled by application of shielding such as steel plates or sheaths within the cable insulating the conductor. The HVSC is designed to include an outer insulation layer (Section 3.2.2).
Secondary stabilisation	Secondary stabilisation methods (including rock dumping and trenching) will be undertaken along part of the HVSC route (Sections 3.2.2.4 and 3.2.2.7). This will reduce the area potential exposed to the generated EMF by increasing the distance to the EMF source.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.

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 the EMF generated by the activities within the scope of this EP, the likelihood of causing a behavioural disturbance to marine fauna is considered low. As such, the likelihood of incidental consequences to values and sensitivities from the generation of an EMF is considered Unlikely (4).
Risk level	Very low (9)

<table>
<tr><th colspan="4">Determination of acceptability</th></tr>
<tr><td>Principles of ESD</td><td colspan="3">The potential risk associated with this aspect is highly localised and limited to individual occurrences and is therefore 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.</td></tr>
<tr><td>Relevant environmental legislation and other requirements</td><td colspan="3">Legislation and other requirements considered for this aspect include:
• North-west Marine Parks Network Management Plan (Ref. 67)
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>North-west Marine Parks Network Management Plan
No specific zone rules identified.</td><td>N/A</td></tr></table></td></tr>
<tr><td>Internal context</td><td colspan="3">No CAPL management processes or procedures were deemed relevant for this aspect.</td></tr>
<tr><td>External context</td><td colspan="3">During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation.
No further objections or claims were raised regarding seabed disturbance arising from the activity.</td></tr>
<tr><td>Defined acceptable level</td><td colspan="3">These risks are inherently acceptable as they are considered lower-order risks 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>Environmental performance standard</th><th>Measurement criteria</th></tr>
<tr><td rowspan="4">Reduce the risk of impacts to sensitive environmental receptors within the OA from petroleum activity

No adverse change to First Nations cultural heritage values from the petroleum activity</td><td>Cable design
HVSC will be designed to include an outer insulation layer.</td><td>Review of HVSC design specifications confirms that HVSC includes an outer insulation layer.</td></tr>
<tr><td>Secondary stabilisation
Rock dumping and trenching will be undertaken as planned along the HVSC.</td><td>Post-lay surveys verify rock dumping and trenching are completed.</td></tr>
<tr><td>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</td><td>Relevant persons consultation records</td></tr>
<tr><td>Relevant persons consultation—Ongoing consultation (First Nations</td><td>As required, records show that the MoC process was undertaken in response to any new information on</td></tr>
</table>

	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	cultural values or features within the OA or EMBA

7.12 Unplanned seabed disturbance

Source

Activities identified as having the potential to result in unplanned seabed disturbance are:

- installation— dropped object (e.g. infrastructure) or incorrect positioning of infrastructure
- field support—dropped object (e.g. tools or equipment) from vessels, ROVs or AUVs (during installation and pre-commissioning, or IMR activities).

Operator error, bad weather events or failure of equipment may lead to object loss, including tools and equipment overboard from the vessels or subsea from ROVs/AUVs at any point during the petroleum activity. The maximum footprint associated with this is expected to be ~10 m^2.

During installation activities, if infrastructure is positioned incorrectly there is a potential for seabed disturbance outside the planned disturbance footprint. The extent of seabed disturbance resulting from incorrect installation and positioning is dependent on the infrastructure. The maximum footprint associated with this is expected to be ~1,300 m^2 (based on the largest individual piece of equipment; a mudmat).

Potential impacts and risks

Impacts	C	Risks	C
N/A	–	Unplanned seabed disturbance may result in:	
		• alteration of benthic communities and habitats	6
		• change to cultural heritage values	6

Consequence evaluation

Alteration of benthic communities and habitats

In the event of object loss or incorrect infrastructure installation, potential environmental impacts would be limited to physical disturbance to benthic communities and habitats in the OA.

As described in Section 4.3.1.1, benthic habitats within the OA mostly comprise unvegetated, soft, and unconsolidated sediments. Recent survey over parts of the Jansz pipeline showed the predominant benthic habitat was bare substrate, with either a smooth (mostly flat) or irregular (mostly flat with minor features) surface (Ref. 262). The only area identified as a high likelihood of biota being present was some patches over the scarp (Ref. 262).

The values and sensitivities within the OA with the potential to be impacted by seabed disturbance include the following KEFs:

- continental slope demersal fish communities
- ancient coastline at 125 m depth contour.

The intersection between the OA and the above KEFs occurs through the parts of the OA associated with the installation of HVSC (Figure 4-17). Recent surveys indicated that habitat within the ancient coastline at 125 m depth contour KEF in proximity to the OA consisted of smooth seabed with bioturbation and appeared devoid of biota (Ref. 262; Table 4-16). Similarly habitat within the continental slope demersal fish communities KEF in proximity to the OA comprise irregular and smooth seabed with bare substrates, discrete depressions of bare substrate, and scarps with bare substrate, were the most dominant benthic features (Ref. 262; Table 4-16).

As identified in Section 4.5.1, the OA overlaps with the Montebello Marine Park. The overlap between the marine park and the OA occurs at the shallower (typically <50 m) end of the OA, which has been 287tilized287ized by sands, clays, or gravels overlying subcropping cemented sediments (Figure 4-2). The habitat within the shallower parts of the OA are expected to be predominantly unvegetated sand, with patches of seagrass and macroalgae, and no associated sessile biota (Section 4.3.1.1).

The potential impacts to benthic communities and habitats as a result of unplanned seabed disturbance would be limited to individual occurrences and localised impacts (i.e. area of impact limited to the size of dropped object or equipment). Thus, CAPL ranked this consequence as Incidental (6).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6), and no protected UCH sites or artefacts have been identified within the OA (Section 4.6.2). Therefore, no impacts to known protected seabed-based UCH (e.g. shipwrecks or archaeology), including First Nations UCH, are expected to occur.

Given known sea level history, part of the OA (i.e. areas in water depths of <125 m; activities within these water depths are associated with the installation of part of the HVSC) would have been emergent land during the extended history of First Nations occupation of Australia. Previous seafloor geomorphological analyses on the mid to outer shelf regions proximal to Barrow Island indicated that some (previously emergent) coastal landscape features represented significant geoheritage value (Ref. 310). 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, it is anticipated that tangible heritage features would not be significantly adversely affected from planned seabed disturbance within the OA.

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was the ocean (Table 4-15)—consequence evaluations to related receptors (i.e. benthic communities and habitats) are provided above.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from unplanned seabed disturbance within the OA is anticipated. The consequence evaluation to benthic communities and habitats is provided above and was assessed as localised and limited environmental impacts. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from unplanned seabed disturbance seabed disturbance within the OA.

Given the expected small (~10–1,300 m^2) footprint associated with the unplanned seabed disturbance, a significant adverse change to cultural values attributed to the offshore marine area from unplanned seabed disturbance is not predicted to occur. As such, CAPL has ranked the consequence for cultural values as Incidental (6).

ALARP decision context justification

Offshore installation and vessel operations from petroleum activities are common; the activities causing this aspect are utilized nationally and internationally. The control measures to manage the risks associated with unplanned seabed disturbance are well understood and implemented by the industry.

During relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in ‘external context’ below, and within appendix d).

The risks associated with unplanned seabed disturbance 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	
Control measure	**Description**
Relevant persons engagement	In the event of a loss of equipment that results in a navigational hazard, other marine users within the vicinity will be notified via very high frequency radio (VHF).
Marine incident report	Reporting marine incidents is an important part of ensuring the safety of people and vessels. In the event of a loss of equipment meeting the requirements of a marine incident, an incident alert report must be issued to AMSA within 4 hours of the incident.
Lost equipment	In the event of an unplanned loss of equipment, prior to the completion of the activity, the lost equipment will be recovered where considered safe and practicable to do so. Considerations for determining if equipment retrieval is safe and practicable include: • risk to personnel • whether the location of the equipment is in recoverable water depths • equipment's proximity to subsea infrastructure • ability to recover the equipment (e.g. nature of equipment, lifting equipment, suitable weather, etc.).
Lifting procedure	Prior to commencement of the petroleum activity, the *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) is used to verify that all vessels undertaking complicated, complex, or heavy lifts have a Lifting Procedure (or equivalent) in place that complies with the requirements of the *Managing Safe Work (MSW) ABU Standardised OE Process* (Ref. 35). The Lifting Procedure will reference safe lifting distances (offsets) from existing subsea infrastructure.
Crossing agreements	As described in Section 3.2.2.1, the HVSC will need to cross existing umbilicals and pipelines. Prior to the petroleum activity commencing, CAPL will ensure that crossing agreements are in place with the other petroleum operators.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.

Additional control measures and cost benefit analysis		
Control measure	**Benefit**	**Cost**
N/A	N/A	N/A

Likelihood and risk level summary	
Likelihood	Loss of equipment has occurred previously in the industry but is not considered likely 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 loss of equipment is considered Unlikely (4).
Risk level	Very low (9)

<table>
<tr><th colspan="3">Determination of acceptability</th></tr>
<tr><td>Principles of ESD</td><td colspan="2">The potential risk associated with this aspect is likely to be highly localised and limited to individual occurrences and is therefore 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.</td></tr>
<tr><td rowspan="3">Relevant environmental legislation and other requirements</td><td colspan="2">Legislation and other requirements considered for this aspect include:
• North-west Marine Parks Network Management Plan (Ref. 67).
CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.</td></tr>
<tr><td>Requirement</td><td>Demonstration</td></tr>
<tr><td>North-west Marine Parks Network Management Plan
No specific zone rules identified.</td><td>N/A</td></tr>
<tr><td>Internal context</td><td colspan="2">No CAPL management processes or procedures were deemed relevant for this aspect.</td></tr>
<tr><td>External context</td><td colspan="2">During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation.
No further objections or claims were raised regarding seabed disturbance arising from the petroleum activity.</td></tr>
<tr><td rowspan="4">Defined acceptable level</td><td colspan="2">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.
However, in alignment with Section 5.6.2. 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>Plan</td><td>Objective</td></tr>
<tr><td>North-west Marine Parks Network Management Plan 2018</td><td>As per Section 4.5.1.</td></tr>
<tr><td colspan="2">Therefore, CAPL has defined the following acceptable level of impact such that it is not inconsistent with these documents:
• no adverse change to the values of the Montebello Marine Park.
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>Environmental performance standard</th><th>Measurement criteria</th></tr>
<tr><td>No unplanned seabed disturbance from activities within the OA</td><td>Relevant persons engagement
In the event of a loss of equipment that results in a navigational hazard, other marine users within the vicinity will be notified via VHF</td><td>Vessel records confirms notification to other marine users</td></tr>
</table>

during the petroleum activity No adverse change to the values of Australian Marine Parks from the petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	**Marine incident report** In the event of a loss of equipment meeting the requirements of a marine incident, an incident alert report must be issued to AMSA within 4 hours of the incident	Records confirm incident alert issued to AMSA within 4 hours of a marine incident occurring
	Lifting procedure If a vessel is undertaking complicated, complex, or heavy lifts, a Lifting Procedure (or equivalent) will be in place prior to activities commencing that complies with the requirements of the *Managing Safe Work (MSW) ABU Standardised OE Process*	Records confirm that a Lifting Procedure (or equivalent) is in place prior to complicated, complex, or heavy lifts being undertaken.
	Crossing agreements CAPL will ensure that crossing agreements with other petroleum operators are in place prior to activities commencing	Records confirm that crossing agreements are in place prior to activities commencing
	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
Reduce the risk of impacts to the environment from the unplanned loss of equipment during the petroleum activity	**Lost equipment** Lost equipment will be retrieved, where safe and practicable to do so	Records show that where assessed as safe and practicable, the lost equipment has been retrieved

7.13 Unplanned release—waste

Source
Activities identified as having the potential to result in an unplanned release of waste to the environment: • field support—waste lost overboard from vessels during installation and pre-commissioning, or IMR activities within the OA. Inappropriate management and storage of waste generated on board vessels has the potential to be released 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/mortality of marine fauna • changes to cultural heritage values	 6 6

Consequence evaluation

Marine pollution resulting in injury and entanglement of marine fauna

If hazardous or non-hazardous waste is lost overboard, the extent of exposure to the environment is limited.

Ingestion or entanglement has the potential to limit feeding or foraging behaviours and thus can result in marine fauna injury or death. In 2003, "[i]njury and fatality to vertebrate marine life caused by ingestion of, or entanglement in, harmful marine debris" was listed as a key threatening process under the EPBC Act (Ref. 282). However, the National Threat Abatement Plan (Ref. 282) identifies that harmful marine debris includes "land-sourced garbage, fishing gear from recreational and commercial fishing abandoned or lost to the sea, and vessel-sourced, solid, non-biodegradable floating materials disposed of or lost at sea".

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 and habitat critical to the survival of a species also overlap with the OA, including:

- Humpback Whale (migration BIA)
- Pygmy Blue Whale (migration BIA)
- Flatback Turtle, Green Turtle, Hawksbill Turtle (internesting buffer BIA, internesting habitat critical to the survival of a species)
- Whale Shark (foraging BIA)
- Fairy Tern, Lesser Crested Tern, Roseate Tern, Wedge-tailed Shearwater (breeding BIAs).

The southern extent of the OA is ~1 km from foraging BIAs for the Flatback Turtle, Green Turtle and Hawksbill Turtle.

The *Recovery Plan for Marine Turtles in Australia* (Ref. 56), the *Conservation Advice for Whale Sharks* (Ref. 57), and the *Wildlife Conservation Plan for Seabirds* (Ref. 237) identifies marine debris as a threat. Several species, including cetaceans, marine reptiles, and birds are also identified in the *Threat Abatement Plan for the Impacts of Marine Debris* (Ref. 282) as species adversely impacted by marine debris.

Marine debris ingested by marine reptiles may result in ecotoxicological effects, physical blockage and internal injuries. The throat structure of marine turtles prevents the turtles regurgitating swallowed items and therefore swallowed items are trapped in the gut where they decompose and leak gases into the body cavity, resulting in injury or mortality (Ref. 119).

Many species of seabirds ingest considerable quantities of plastic and other marine debris, which has a wide range of lethal or sublethal effects (Ref. 237). This debris can cause physical damage to the body, or perforate, block or impair the digestive system, resulting in starvation (Ref. 237).

Given the restricted exposures and the small quantity of waste with the potential to cause marine pollution that is expected to be generated from this petroleum activity, it is expected that any impacts from marine pollution would result in impacts to a few individual fauna. Thus, CAPL ranked this consequence as Incidental (6).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was the ocean and marine fauna (Table 4-15)—consequence evaluations to these receptors are provided above.

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 recognize as part of their cultural heritage" (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives of from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from an unplanned release of waste within the OA is anticipated. The consequence evaluation for marine fauna is provided above—if an interaction (e.g. entanglement) did occur, any impact would be to individuals, and is not expected to affect the overall population of the species. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected from an unplanned release of waste within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from an unplanned release of waste within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values 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 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 relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in 'external context' below, and within appendix d).

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

Control measure	Description
Marine Order 95—Marine pollution prevention—garbage	MARPOL 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 Annex V requires that a garbage / waste 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 Annex V.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.

Additional control measures and cost benefit analysis

Control measure	Benefit	Cost
N/A	N/A	N/A

<table>
<tr><th colspan="3">Likelihood and risk level summary</th></tr>
<tr><td>Likelihood</td><td colspan="2">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).</td></tr>
<tr><td>Risk level</td><td colspan="2">Very low (10)</td></tr>
<tr><th colspan="3">Determination of acceptability</th></tr>
<tr><td>Principles of ESD</td><td colspan="2">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 additional 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 for this aspect include:
Marine Order 95
MARPOL 73/78
Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia’s coasts and oceans (2018) (Ref. 282)
Conservation Management Plan for the Blue Whale 2015–2025 (Ref. 60)
Recovery Plan for Marine Turtles in Australia (Ref. 56)
Conservation Advice Rhincodon typus whale shark (Ref. 57)
National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011–2016 (Ref. 118)
Wildlife Conservation Plan for Migratory Shorebirds (Ref. 76)
Wildlife Conservation Plan for Seabirds (Ref. 237)
Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) (Ref. 302)
Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake) (Ref. 303)
North-west Marine Parks Network Management Plan (Ref. 67).
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 95
Gives effect to Annex V of MARPOL 73/78</td><td>Requirements for the prevention of pollution from garbage have been incorporated into the Marine Order 95—Marine pollution prevention—garbage control measure</td></tr>
<tr><td>Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia’s coasts and oceans
No specific action identified.</td><td>N/A</td></tr>
<tr><td>Recovery Plan for Marine Turtles in Australia
No specific management action identified.</td><td>N/A</td></tr>
</table></td></tr>
</table>

	Conservation Advice for the Whale Shark 2015–2020 No specific action identified.	N/A
	National Recovery Plan for Threatened Albatrosses and Giant Petrels No specific action identified.	N/A
	Wildlife Conservation Plan for Migratory Shorebirds No specific action identified.	N/A
	Wildlife Conservation Plan for Seabirds No specific 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
	North-west Marine Parks Network Management Plan 2018 The Plan requires that "waste from normal operations of vessels must be compliant with requirements under the International Convention for the Prevention of Pollution from Ships (MARPOL), the International Maritime Organisation (IMO) convention covering prevention of pollution of the marine environment by ships from operational or accidental causes".	The Montebello Marine Park is a multiple use zone (IUCN VI). The control measures identified for the management of planned discharges from vessel operations are in accordance with MARPOL requirements, and therefore also in accordance with the requirements of the multiple use zone of an Australian Marine Park.
Internal context	No CAPL management processes or procedures were deemed relevant for this aspect.	
External context	During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation. No further objections or claims were raised regarding waste management arising from the petroleum 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. However, in alignment with Section 5.6.2, 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 minimize 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 minimized.
	National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011–2016	Overall objective: To ensure the long term survival and recovery of albatross and giant petrel populations breeding and foraging in Australian jurisdiction by reducing or eliminating human related threats at sea and on land
	Wildlife Conservation Plan for Migratory Shorebirds	Objective 3: Anthropogenic threats to migratory shorebirds in Australia are minimised or, where possible, eliminated.
	Wildlife Conservation Plan for Seabirds	Objective 2: Seabirds and their habitats are identified, protected and managed in Australia.
	North-west Marine Parks Network Management Plan 2018	As per Section 4.5.1
	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 adverse change to the values of the Montebello Marine Park. 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 of waste, that the risk to marine fauna and/or values of the AMP are also subsequently managed.	

Environmental performance outcomes	Environmental performance standard	Measurement criteria
No unplanned release of waste to the environment during the petroleum activity No injury or mortality to marine fauna from an unplanned release of waste associated with the petroleum activity within the OA	**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)

No adverse change to the values of Australian Marine Parks from the petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	**Marine Order 95—Marine pollution prevention—garbage** For waste that is incinerated on board a marine vessel, the incinerator is to be IMO-approved and the waste incinerated is to be recorded in accordance with MARPOL 73/78 Annex V	Current International Air Pollution Prevention (IAPP) Certificate (for marine vessels >400 T or certified to carry >15 persons)
		Current and completed Garbage Record Book (for marine vessels >400 T or certified to carry >15 persons)
	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

7.14 Unplanned release—loss of containment

Source
The operation of vessels includes handling, using, and transferring hazardous materials, and has the potential to result in a loss of containment (LOC) event. Based on the activities described in this EP, the following potential LOC scenarios were identified: • using, handling, and transferring hazardous materials and chemicals on board (~1 m^3)[1] • hydraulic line failure from equipment (~2 m^3)[2] • failure during vessel refuelling (50 m^3)[3] *[1]A range of hydrocarbons and other hazardous chemicals / materials are likely to be present during onboard the vessels and FCS; 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] The volume of an unplanned release associated with a hydraulic line failure will vary with the equipment in use; however, the maximum credible volume associated with failure of a hydraulic power unit was estimated to be ~2 m^3 based on the loss of the full volume.* *[3] AMSA (Ref. 120) 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 • changes to cultural heritage values	 5 6

Consequence evaluation

Indirect impacts to fauna arising from chemical toxicity

Upon release, a loss of 50 m^3 of marine fuel would be expected to result in a localised and short-term change the water quality within surface waters. Given the surface release, and the known weathering and fate behaviour of MDO (Section 7.15.2.1), the small 50 m^3 volume is expected to form a film on the surface and rapidly evaporate and disperse following release. The environmental impacts associated with a surface release of 50 m^3 of MDO are expected to be much less than those associated with a loss of MDO from a vessel collision, and thus are not evaluated further in this section given that this risk is evaluated in Section 7.15.

The remaining LOC scenarios are limited to very small (~1–2 m^3) releases of hydraulic fluid or other chemicals.

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 or habitat critical to the survival of a species also overlap with the OA, including:

- Humpback Whale (migration BIA)
- Pygmy Blue Whale (migration BIA)
- Whale Shark (foraging BIA)
- Flatback Turtle, Green Turtle, Hawksbill Turtle (internesting buffer BIA, internesting habitat critical to the survival of a species).

A spawning ground for the EPBC Act listed conservation dependent Southern Bluefin Tuna also intersects with the OA (Section 4.4.1.1).

Based on the nature of these unplanned releases, which are which are very small (<2 m^3), instantaneous and intermittent, the extent and severity of any potential impact is expected to be be spatially and temporally 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).

Changes to cultural heritage values

There are no World, National, or Commonwealth heritage listed places or sites within the OA (Section 4.6).

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was marine fauna (Table 4-15)—consequence evaluations to these receptors (i.e. marine fauna) are provided above.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

No impact pathway to a change in access to Country from an unplanned minor LOC within the OA is anticipated. The consequence evaluation to marine fauna is provided above, and were assessed as having localised and limited environmental impacts that are not expected to affect the overall population of the species. As such, it is anticipated that intangible heritage values such

as songlines and connection to Country would not be significantly adversely affected from an unplanned minor LOC within the OA.

Given the offshore location of the OA (~5.5 km from Barrow Island, and ~70–200 km from the mainland; Figure 3-1) and duration of the campaigns (~2 days to ~5–6 months), a significant adverse change to cultural heritage values attributed to the offshore marine area from an unplanned minor LoC within the OA is not predicted to occur. As such, CAPL has ranked the consequence for cultural heritage values as Incidental (6).

ALARP decision context justification

Offshore operations including subsea infrastructure installation are commonplace and well-practised offshore 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 managed these are well understood and implemented by the petroleum industry and CAPL.

During relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in 'external context' below, and within appendix d).

An unplanned LOC is a lower-order risks in accordance with Table 5-3. As such, CAPL applied ALARP Decision Context A for this aspect.

Good practice control measures

Control measure	Description
Marine Standard	Chevron's *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) ensures that various legislative and Chevron requirements and activities necessary for safe, reliable, and efficient marine services are met. Specifically, CAPL's 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.
Diesel storage on the FCS	Any diesel on the FCS will be stored in accordance with the SDS,and have secondary containment.
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 vessels (as appropriate to vessel class) 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.
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3).

<table>
<tr><td></td><td colspan="2">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.</td></tr>
<tr><td colspan="3">Additional control measures and cost benefit analysis</td></tr>
<tr><td>Control measure</td><td>Benefit</td><td>Cost</td></tr>
<tr><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td colspan="3">Likelihood and risk level summary</td></tr>
<tr><td>Likelihood</td><td colspan="2">The likelihood that a 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 large 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 LOC.</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 risk 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.</td></tr>
<tr><td>Relevant environmental legislation and other requirements</td><td colspan="2">Legislation and other requirements considered relevant for this aspect include:
• MARPOL 73/78
• Marine Order 91—Marine pollution prevention—oil
• North-west Marine Parks Network Management Plan (Ref. 67).
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 91
Gives effect to Annex I of MARPOL 73/78</td><td>Requirements for a vessel to have a SOPEP have been incorporated into the SOPEP / Shipboard Marine Pollution Emergency Plan control measure</td></tr>
<tr><td>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.”</td><td>The Montebello Marine Park is 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 8.4.2.
Therefore, this activity is not considered to be inconsistent with the North-west Marine Parks Network Management Plan.</td></tr>
</table></td></tr>
<tr><td>Internal context</td><td colspan="2">These CAPL management processes or procedures were deemed relevant for this aspect:</td></tr>
</table>

<table>
<tr><td></td><td colspan="2">• Marine Standard Non Tankers: Corporate OE Standard (Ref. 36)
Control measures related to the above management processes have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.</td></tr>
<tr><td>External context</td><td colspan="2">During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming that intangible heritage, including songlines, has been considered in the environment description and risk assessments within the EP and that CAPL is committed to continue to learn about the values and sensitivities associated with Sea Country through ongoing consultation.
No further objections or claims were raised regarding LOC management arising from the petroleum activity.</td></tr>
<tr><td rowspan="4">Defined acceptable level</td><td colspan="2">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.
However, in alignment with Section 5.6.2, 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>Plan</td><td>Objective</td></tr>
<tr><td>North-west Marine Parks Network Management Plan 2018</td><td>As per Section 4.5.1.</td></tr>
<tr><td colspan="2">Therefore, CAPL has defined the following acceptable level of impact such that it is not inconsistent with these documents:
• no adverse change to the values of the Montebello Marine Park.
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 values of the AMP are also subsequently managed.</td></tr>
<tr><td>Environmental performance outcomes</td><td>Environmental performance standard</td><td>Measurement criteria</td></tr>
<tr><td rowspan="2">No unplanned release of hydrocarbons or hazardous materials to the environment during the petroleum activity

No adverse change to the values of Australian Marine Parks from the petroleum activity

No adverse change to First Nations cultural heritage values from the petroleum activity</td><td>Marine Standard
Prior to commencement of installation 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.</td><td>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</td></tr>
<tr><td>Marine Standard
Refuelling is undertaken in accordance with CAPL-approved refuelling / bunkering procedures,</td><td>Records confirm that refuelling is undertaken in accordance with CAPL-approved refuelling/bunkering procedure</td></tr>
</table>

	which include the appropriate weather / sea / visibility conditions, as determined by the Vessel Master.	
	Diesel storage on the FCS All diesel on the FCS shall be stored in secondary containment	Records show that all diesel on the FCS is stored in secondary containment
	SOPEP Marine vessels (as appropriate to vessel class) 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 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.
	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

7.15 Unplanned release—vessel collision

7.15.1 Credible scenario

A vessel collision event within the OA is considered an unlikely but credible unplanned event. A major marine spill because of vessel collision is only likely to occur due to a combination of exceptional circumstances (e.g. loss of DP, navigational error, inclement weather conditions). Given the location, water depths, and lack of shallow submerged features within the OA, grounding is not considered credible, and as such has not considered further.

Based upon the types of vessels and fuel type likely to be utilised for the activities in this EP, CAPL was able to identify the credible worst case scenarios (as per AMSA guidelines; Ref. 120) as being:

- surface release of ~446 m^3 of MDO resulting from a vessel collision event involving vessels associated with HVSC installation
- surface release of ~1,150 m^3 of MDO resulting from a vessel collision event involving vessels associated with the FCS and SCSt installation and pre-commissioning
- surface release of ~325 m^3 of MDO resulting from a vessel collision event involving vessels associated with IMR.

Therefore, as a conservative approach to risk assessment for activities covered under this EP, previous modelling of a ~1,750 m^3 spill has been used for the vessel collision scenario within the Jansz field. Additional modelling was completed for a 450 m^3 spill at the State waters boundary. Both modelled scenarios use volumes larger than the identified credible worst-case scenarios.

7.15.2 Spill modelling

CAPL commissioned RPS to conduct spill modelling to inform the risk assessment associated with the vessel collision events (Ref. 122, Ref. 123).

A three-dimensional oil spill model (SIMAP) was used to simulate the drift, spread, weathering and fate of the spilled oil (Ref. 122, Ref. 123). 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 7-12 summarises the model settings; Table 7-13 summarises the hydrocarbon properties for MDO, and the modelled environmental thresholds are described in Table 7-14.

Table 7-12: Vessel collision credible spill scenario inputs

Parameter	Details	
Release Location	Jansz-Io	State water boundary
Latitude	19°51’8.7” S	20°40’10.9” S
Longitude	114°30’57.8” E	115°21’51.5” E
Water Depth	~1,350 m	~25 m
Oil type	MDO	
Simulation spill type	Surface	
Simulation spill volume	1,750 m^3	450 m^3
Simulation spill duration	24 hours	6 hours
Total simulation duration	50 days	40 days
Number of randomly selected spill simulation start times	100 per season (300 total)	
Seasons modelled	Summer (December to February) Transitional (March, October and November) Winter (April to September)	Summer (September to the following March) Transitional (April and August) Winter (May to July)

Table 7-13: Physical properties and boiling point ranges for MDO

Characteristic	Value			
Density	829.1 kg/m^3 (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%

Table 7-14: Hydrocarbon environmental thresholds^

Environmental threshold	Hydrocarbon Ecological EMBA^	Hydrocarbon Social EMBA^	Planning Area for Scientific Monitoring*	Justification
Surface ≥1 g/m^2 (low)		✓	✓	In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 125), CAPL has set the ≥1 g/m^2 surface impact threshold for social, economic, and cultural receptors. 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. 126) 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. 125), this low threshold for surface oil establishes the planning area for scientific monitoring.
Surface ≥10 g/m^2 (moderate)	✓	✓		In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 125), CAPL has set the≥10 g/m^2 surface impact threshold for ecological receptors. This threshold is equivalent to ~10,000 L/km^2 or a layer thickness of ~10 µm. The Bonn Agreement Oil Appearance Code (Ref. 126) 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. 125). This threshold is consistent with observations ranging from physical oiling to toxicity effects for marine fauna within literature, including French et al. (Ref. 127), French-McCay (Ref. 128), Engelhardt (Ref. 129), Clark (Ref. 130), Geraci and St. Aubin (Ref. 131) and Jenssen (Ref. 132).
In-water (dissolved) ≥10 ppb (low)			✓	In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 125), this low threshold for dissolved oil establishes the planning area for scientific monitoring

Environmental threshold	Hydrocarbon Ecological EMBA ^	Hydrocarbon Social EMBA ^	Planning Area for Scientific Monitoring*	Justification
				based on potential for exceedances of water quality triggers.
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. 133], Nordtug et al. [Ref. 134], Redman [Ref. 135]). 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. 125), CAPL has set the ≥50 ppb in-water (dissolved) impact threshold for sublethal ecological effects and for social, economic, and cultural receptors. This threshold is considered by NOPSEMA to approximate potential toxic effects, particularly sublethal effects to sensitive species (Ref. 125). 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 (entrained) ≥10 ppb (low)			✓	In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 125), this low threshold for entrained oil establishes the planning area for scientific monitoring based on potential for exceedances of water quality triggers.
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. 125), CAPL has set the≥100 ppb in-water (entrained) impact threshold for sublethal ecological effects and for social, economic, and cultural receptors. This threshold is considered by NOPSEMA as appropriate for informing risk evaluation (Ref. 125). 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. 136) 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.
Shoreline ≥10 g/m^2 (low)		✓		In accordance with NOPSEMA's oil spill modelling bulletin (Ref. 125), CAPL has set the ≥10 g/m^2 shoreline impact threshold for social, economic, and cultural receptors. 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

Environmental threshold	Hydrocarbon Ecological EMBA ^	Hydrocarbon Social EMBA ^	Planning Area for Scientific Monitoring*	Justification
				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. 125), CAPL has set the≥100 g/m^2 shoreline impact threshold for ecological receptors. This threshold is equivalent to ~100 mL/m^2 or 20 teaspoons/m^2. French et al. (Ref. 127) and French-McCay (Ref. 128) 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. 137) 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. 138], Suprayogi and Murray [Ref. 139]).

^ Hydrocarbon thresholds used to define the Hydrocarbon Ecological and Hydrocarbon Social EMBAs (the presence of environmental values and sensitivities within this area have been identified in Section 4). These thresholds and the spatial extent of the Hydrocarbon EMBAs are used as part of the environmental impact and risk assessment presented below.

** Environmental thresholds used to define the Planning Area for Scientific Monitoring (the presence of environmental values and sensitivities within this area have been identified within Appendix D of the Operational and Scientific Monitoring Plan: Environmental Monitoring in the Event of an Oil Spill to Marine or Coastal Waters [Ref. 3]).*

7.15.2.1 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 (API of 37.6) and a low pour point (−14 °C). 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 (BP <180 °C); a further 34.6% should evaporate within the first 24 hours (BP180 °C-265 °C); and an additional 54.4% should evaporate over several days (BP 265 °C-380 °C). Approximately 5% (by mass) of MDO will not evaporate at atmospheric temperatures. These compounds will persist in the environment.

7.15.2.2 Modelling outputs

Stochastic modelling outputs from RPS (Ref. 122, Ref. 123) are summarised in Table 7-15 and Table 7-16 having regard to the MNES (that are also identified as relevant values and sensitivities under the OPGGS(E)R) identified in Section 4.

For the 1,750 m^3 MDO release within the Jansz-Io field:

- The maximum distance from the release location to the ≥1 g/m^2 and ≥10 g/m^2 surface impact thresholds was ~208 km east-northeast (transitional) and ~120 km northeast (transitional), respectively.
- No shoreline contact was predicted to occur during any season.
- Dissolved oil at ≥50 ppb impact thresholds was predicted to occur. However, dissolved oil was predicted to remain in the surface layers only (no predicted exposure at depths >10 m below the surface).
- 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.

For the 450 m^3 MDO release at the State water boundary:

- The maximum distance from the release location to the ≥1 g/m^2 and ≥10 g/m^2 surface impact thresholds was 66.3 km south-southwest (transitional), 32.4 km south-southwest (winter), respectively.
- The probability of accumulation on any shoreline at, or above, the low threshold (≥ 10 g/m^2) was greatest during summer at 79%, while the minimum time before shoreline accumulation was 0.25 days (or 6 hours) predicted during winter. The maximum volume of oil ashore was predicted to occur on the west coast of Barrow Island during the transitional period with 227.2 m^3. Multiple coastal areas were predicted to be potentially exposed above the ≥100 g/m^2 impact threshold, with the highest probability of occurrence being 23% at the Montebello Islands during summer. The probabilities for exposures above the ≥100 g/m^2 impact threshold was low for adjacent shorelines e.g. 15% at Barrow Island, 2% at Boodie Island, Flat Island, 17% at Lowendal Island, 3% at Middle Island, 1% at Bessieres Island, and 3% at Serrurier Island).
- Dissolved oil at ≥50 ppb impact thresholds was predicted to occur. No dissolved oil at ≥ 400 ppb impact thresholds was predicted to occur during any season. Dissolved oil was predicted to remain in the surface layers, with no exposure at depths >20 m below the surface reported.
- Entrained oil at ≥100 ppb impact thresholds was predicted to occur. Entrained oil was predicted to remain in the surface layers, with no exposure at depths >20 m below the surface reported.

Table 7-15: Jansz-Io 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	—	—	—	7–10%	—	—
	Montebello	—	—	—	0–1%	—	—
	Ningaloo	—	—	—	—	—	—
KEF	Ancient coastline at 125 m depth contour	—	—	—	0–1%	—	—
	Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	—	—	—	4–5%	—	—
	Commonwealth waters adjacent to Ningaloo Reef	—	—	—	—	—	—
	Continental slope demersal fish communities	0–1%, 50 days	—	—	3–12%	—	—
	Exmouth Plateau	5–10%, 16–27 days	0–1%, 18 days	0–1%	12–14%	—	—
World Heritage Properties / National Heritage Places	The Ningaloo Coast *(inferred from Cape Range IBRA, Exmouth shoreline)*	—	—	—	—	—	—
Commonwealth Heritage Properties	Ningaloo Marine Area – Commonwealth Waters *(inferred from Ningaloo IMCRA)*	—	—	—	—	—	—

^ *Ranges in values shown are due to the different results between seasons.*

Table 7-16: State waters boundary 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	—	—	—	0-3%	—	—
	Montebello	99-100%, 0.04 days	74-89%, 0.04 days	6-15%	76-89%	—	—
	Ningaloo	—	—	—	0-6%	—	—
KEF	Ancient coastline at 125 m depth contour	—	—	—	3-10%	—	—
	Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	—	—	—	0-6%	—	—
	Commonwealth waters adjacent to Ningaloo Reef	—	—	—	0-6%	—	—
	Continental slope demersal fish communities	—	—	—	1-3%	—	—
	Exmouth Plateau	—	—	—	—	—	—
World Heritage Properties / National Heritage Places	The Ningaloo Coast *(inferred from Cape Range IBRA, Exmouth shoreline)*	14-18%, 0.29-0.38 days	1-7%-0.38-0.63	—	21-31%	4-23%, 3.58-13.25 days, 1.5-5.1 km	—
Commonwealth Heritage Properties	Ningaloo Marine Area – Commonwealth Waters *(inferred from Ningaloo Coast World Heritage)*	—	—	—	1-6%	4-23%, 3.58-13.25 days, 1.5-5.1 km	—

^ *Ranges in values shown are due to the different results between seasons*

7.15.3 Risk assessment

Source

Activities identified as having the potential to result in a vessel collision event are:

- field support—vessel operations during the petroleum activity (including installation and pre-commissioning, or IMR activities) within the OA.

A vessel collision event may occur due to a combination of circumstances (e.g. loss of DP, navigational error, or inclement 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	4
		• smothering of subtidal and intertidal habitats	4
		• indirect impacts to commercial fisheries	5
		• reduction in amenity resulting in impacts to tourism and recreation	5
		• changes to values and sensitivities of marine protected areas	4
		• changes to cultural heritage values	4

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. 131; Ref. 140).

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. 140). 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. 140). French-McCay (Ref. 128) 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 to marine mammals given feeding behaviours (such as surface skimming or gulp feeding for cetacean species) which can lead to the ingestion of oil from within the water column or from the surface. However, 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. Necropsies from cetacean mortalities have generally concluded that death resulted from causes other than oil (Ref. 283).

Dugongs have smooth skin surfaces and therefore are less likely to be affected by oil adhering to their skin. If surfacing in a slick, the Dugongs may foul their sensory hairs (around their mouths) or their eyes; thesecould lead to inflammation/infections that then affect their ability to feed or breed (Ref. 142). Dugongs may also ingest oil (directly, or indirectly via oil-affected seagrass), and depending on the amount and type of oil, the effects could be short-term to long-term/chronic (e.g. organ damage). However, it is noted that reports on oil pollution damage to Dugongs is rare (Ref. 283).

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. 140).

As identified in Section 4.3.3.1, several marine mammal species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the Hydrocarbon Ecological EMBA. The following BIAs for marine mammals intersect the Hydrocarbon Ecological EMBA (Table 4-6):

- Humpback Whale (migration)
- Pygmy Blue Whale (foraging and migration)
- Dugong (breeding, calving, foraging, and nursing).

As these species are considered most sensitive to surface and entrained exposures, deterministic analyses were utilised to understand the potential extent and duration of exposure.

Deterministic analysis for the largest sea surface swept area (from the State waters boundary scenario), predicts that surface hydrocarbons concentrations ≥10 g/m^2 are present for <2 days following the spill event, with a maximum area of coverage of ~9 km^2 occurring ~1 day after the spill commenced. This deterministic scenario is considered most relevant for nearshore waters and subsequent impacts to nearshore BIA's. Using the Humpback migration BIA as an example, modelling indicates that the extent of surface exposure was predicted to be limited to ~0.006% of the entire BIA. As the extent and duration of exposure to nearshore environments is expected to be limited the potential for significant environmental impacts would also be limited. However, as behaviours for some marine mammals in nearshore waters (e.g. dugongs within calving and nursing BIAS around Exmouth and North West Cape peninsula) are likely to result in increased sensitivity to hydrocarbon exposures as species are less likely to be transient, impacts to nearshore environments will potentially be higher than those associated with offshore exposures. However, it is also noted that these areas of aggregations are further from the potential spill locations, and the concentrations and durations of exposure are reduced from those in closer proximity (e.g. Barrow Island), where presence of marine mammals is expected to be transitory (e.g. migration pathway for Humpback Whales).

While no deterministic analyses were conducted for the spill modelling at the Jansz field (Ref. 122), based on other offshore MDO modelling completed for CAPL in the adjacent Gorgon field (e.g. Ref. 121), the largest areas of surface hydrocarbon intersected with only a small (~0.005%) proportion of the Pygmy Blue Whale BIA.

The deterministic analysis for the largest area of entrained hydrocarbon (from the State waters boundary scenario) indicates that entrained hydrocarbons concentrations ≥100 ppb are present for <10 days following the spill event, with a maximum area of coverage of ~75 km^2 occurring ~4 days after the spill commenced. This deterministic scenario is considered most relevant for nearshore waters, and subsequent impacts to nearshore BIA's. Using the Humpback Whale migration BIA as an example, modelling indicates that the extent of entrained exposures was predicted to be limited to ~0.05% of the entire BIA.

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 Minor (5) and Moderate (4), 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. 141).

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. 142). 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. 141).

As identified in Section 4.3.3.2, several reptile species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the Hydrocarbon Ecological EMBA. 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.

Stochastic modelling of the State waters boundary scenario indicated that the Montebello Islands had the highest probability of being exposed to shoreline hydrocarbons accumulation of ≥100 g/m^2, with a probability of occurrence being 23% during summer. The deterministic model for the longest length of shoreline accumulation area above ≥100 g/m^2 (from the State waters boundary scenario) predicted the largest volume of oil ashore as 118.9 m^3, and the maximum length of shoreline exposed to ≥100 g/m^2 was ~22 km occurring ~9 days after the spill commenced. The Montebello Islands are identified as habitat critical to the survival of Flatback, Green and Hawksbill turtles (Section 4.3.3.2). 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 analysis for the largest sea surface swept area (from the State waters boundary scenario), predicts that surface hydrocarbons concentrations ≥10 g/m^2 are present for <2 days following the spill event, with a maximum area of coverage of ~9 km^2 occurring ~1 day after the spill commenced. This deterministic scenario is considered most relevant for nearshore waters and subsequent impacts to nearshore BIA's. Using the Flatback Turtle internesting BIA around Barrow Island as an example, modelling indicates that the extent of surface exposures was predicted to be limited to <1% of the entire BIA. This information indicates that if a vessel spill event occurred during the nesting season, it is unlikely to impact entire local internesting populations.

The EPBC threatened Short-nosed Seasnake and Leaf-scaled Seasnake, and other EPBC marine listed seasnake species, may be present within the Hydrocarbon EMBAs. Oil pollution has been identified as a pressure 'of potential concern' (Ref. 332) to seasnakes[46]. Sea snakes are susceptible to oil on the sea surface (Ref. 332; Ref. 334; Ref. 335). Being air breathers and obligate bottom feeders oil may be either inhaled or ingested (Ref. 332; Ref. 336). As described above, surface oil exposure above impact thresholds are predicted to be only be present for a short (<2 days) duration and over a relatively small (maximum ~9 km^2) area. Any exposure to benthic habitats is only predicted to occur within nearshore (<20 m water depth) areas. Using the shoreline exposure described above as indicative of oil presence in a nearshore environment, 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 oil exposure, 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 Minor (5) and Moderate (4), respectively.

Fish, 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. Fish species are expected to have higher sensitivity to exposures of in-water (entrained) oil components.

Potential effects include damage to the liver and lining of the stomach and intestine, and toxic effects on embryos (Ref. 143). 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. 144; Ref. 145; Ref. 146).

Demersal fish are not expected to be impacted given the presence of entrained oil is predicted in the surface layers <20 m water depth) only.

Pelagic free-swimming fish and sharks are not expected to suffer long-term damage from oil spill exposure because dissolved/entrained hydrocarbons are typically insufficient to cause harm (Ref. 147). 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. 148). 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 once they are outside of the exposure area (Ref. 149).

[46] The pressure analysis distinguished between oil pollution from shipping ('of less concern') and oil rigs ('of potential concern') (Ref. 332). Although the aspect source for this risk assessment is a spill from a vessel, the higher pressure concern has been adopted.

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 Hydrocarbon Ecological EMBA. The following BIAs intersect the Hydrocarbon Ecological EMBA:

- Whale Shark (foraging).

As fish species are most sensitive to surface and entrained exposures, deterministic analyses were utilised to understand the potential extent and duration of exposure.

Deterministic analysis for the largest sea surface swept area (from the State waters boundary scenario), predicts that surface hydrocarbons concentrations ≥10 g/m^2 are present for <2 days following the spill event, with a maximum area of coverage of ~9 km^2 occurring ~1 day after the spill commenced. This deterministic scenario is considered most relevant for nearshore waters and subsequent impacts to nearshore BIA's. Using the Whale Shark foraging BIA as an example, modelling indicates that the extent of surface exposures was predicted to be limited to ~0.004% of the entire BIA.

While no deterministic analyses were conducted for the spill modelling at the Jansz field (Ref. 122), based on other offshore MDO modelling completed for CAPL in the adjacent Gorgon field (e.g. Ref. 121), the largest areas of surface hydrocarbon also intersected with only a small (~0.007%) proportion of the Whale Shark BIA.

The deterministic analysis for the largest area of entrained hydrocarbons (from the State waters boundary scenario) indicates that entrained hydrocarbons concentrations ≥100 ppb are present for <10 days following the spill event, with a maximum area of coverage of ~75 km^2 occurring ~4 days after the spill commenced. This deterministic scenario is considered most relevant for nearshore waters, and subsequent impacts to nearshore BIA's. Using the Whale Shark foraging BIA as an example, modelling indicates that the extent of entrained exposures was predicted to be limited to ~0.03% of the entire BIA.

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 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 Minor (5) and Moderate (4), 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. 130; Ref. 142). Damage to external tissues, including skin and eyes, can occur, along with internal tissue irritation in lungs and stomachs (Ref. 150). Acute and chronic toxic effects may result where the product is ingested as the bird attempts to preen its feathers (Ref. 150).

As identified in Section 4.3.3.4, several bird species listed as threatened and/or migratory under the EPBC Act have the potential to occur within the Hydrocarbon Ecological EMBA. 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.

Stochastic modelling from the State waters boundary scenario indicated that the Montebello Islands had the highest probability of being exposed to shoreline hydrocarbons accumulation of ≥100 g/m^2, with a probability of occurrence being 23% during summer. The deterministic model for the longest length of shoreline accumulation area above ≥100 g/m^2 (from the State waters boundary scenario) predicted the largest volume of oil ashore as 118.9 m^3, and the maximum length of shoreline exposed to ≥100 g/m^2 was ~22 km occurring ~9 days after the spill commenced.

Deterministic analysis for the largest sea surface swept area (from the State waters boundary scenario), predicts that surface hydrocarbons concentrations ≥10 g/m^2 are present for <2 days following the spill event, with a maximum area of coverage of ~9 km^2 occurring ~1 day after the spill commenced. This deterministic scenario is considered most relevant for nearshore waters and subsequent impacts to nearshore BIA's. Using the Roseate Tern breeding BIA surrounding Lowendal Islands as an example, modelling indicates that the extent of surface exposures was predicted to be limited to <3% of the entire BIA. This information indicates that if a vessel spill event occurred during the 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 Minor (5) and Moderate (4), respectively.

Smothering of subtidal and intertidal habitats

Offshore benthic habitats (e.g. coral, sponges, seagrass, macroalgae)

Direct contact of hydrocarbons to subtidal habitats can cause smothering. 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. 284; Ref. 285), act as a barrier to diffusion of CO_2 across cell walls in macroalgae (Ref. 286), and a decline in metabolic rate, bleaching or partial mortality in corals (Ref. 151; Ref. 152) and impair respiration and photosynthesis by symbiotic zooxanthellae (Ref. 287; Ref. 288). 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. 289).

Stochastic modelling predicted coral reefs associated with the following values or sensitivities within the Hydrocarbon EMBAs have the potential to be exposed to hydrocarbon concentrations above impact thresholds:

- Ningaloo Coast (World Heritage Property, National Heritage Place).

The Ningaloo marine area 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, as well as other Pilbara inshore islands.

The probability of exposure to entrained oil (≥100 ppb) at the Ningaloo Coast heritage area was 1–6% from the State waters boundary scenario (Table 7-16), and was not predicted to occur from the Jansz field scenario (Table 7-15). Stochastic modelling showed that in-water (entrained or dissolved) hydrocarbons above impact thresholds (≥100 ppb and ≥50 ppb respectively) were predicted to remain within the surface layers (≤20 m water depth) only. Therefore, exposure to coral reefs or other subtidal habitat types in waters deeper than 20 m are not predicted to occur.

Nearshore benthic habitats (e.g. coral, sponges, seagrass, macroalgae)

Smothering of benthic habitat communities within shallow water environments may occur if a surface slick or in-water entrained oil above impact thresholds occurs in the intertidal area.

No surface exposure at the ≥10 g/m^2 impact threshold was predicted for the Ningaloo Coast heritage area for any of the modelled scenarios (Table 7-15; Table 7-16). Therefore, impacts from smothering within Ningaloo intertidal areas due to surface oil is not expected to occur.

However, stochastic modelling indicated that the west coast of Barrow Island may be exposed to surface oil at the ≥10 g/m^2 impact threshold. Subtidal and intertidal habitats off Barrow Island include coral, macroalgae and seagrass. Deterministic analysis for the largest sea surface swept area (from the State waters boundary scenario), predicts that surface hydrocarbons concentrations ≥10 g/m^2 are present for <2 days following the spill event, with a maximum area of coverage of ~9 km^2. The deterministic model for the longest length of shoreline accumulation area above ≥100 g/m^2 (from the State waters boundary scenario) predicted the largest volume of oil ashore as 118.9 m^3, and the maximum length of shoreline exposed to ≥100 g/m^2 was ~22 km occurring ~9 days after the spill commenced. These deterministic scenarios are considered most relevant for nearshore waters and subsequent impacts to nearshore corals or other intertidal habitats. 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).

Coastal habitats (e.g. mangroves, 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. 153). 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. 153).

As identified in Section 4.3.2, coastal habitats on Barrow, Montebello, and other Pilbara islands include sandy beaches, rocky coasts, and mangroves. Coastal and marine baseline studies undertaken by CAPL (Ref. 214) identified that there are no mangrove stands on the west coast of Barrow Island, where the Hydrocarbon Ecological EMBA intersect with the coast; however there may be some intersect with the isolated patches of mangroves on the Montebello Islands.

Stochastic modelling for the Jansz field scenario indicated that no shoreline accumulation was predicted to occur, and as such shoreline exposure to coastal habitats from an offshore vessel spill event is not discussed further.

Stochastic modelling from the State waters boundary scenario indicated that the Montebello Islands had the highest probability of being exposed to shoreline hydrocarbons accumulation of ≥100 g/m^2, with a probability of occurrence being 23% during summer. The deterministic model for the longest length of shoreline accumulation area above ≥100 g/m^2 (from the State waters boundary scenario) predicted the largest volume of oil ashore as 118.9 m^3, and the maximum length of shoreline exposed to ≥100 g/m^2 was ~22 km occurring ~9 days after the spill commenced.

Based on an assessment of the predicted magnitude of shoreline exposure, it is expected that only a small proportion of any coastal habitat would be exposed above the defined impact thresholds. However, it is acknowledged that the habitats on the offshore islands represent important habitats for fauna (e.g. turtles, birds), or that particular habitats (e.g. mangroves) are considered regionally significant. Therefore, the potential impacts of oil to cause smothering was ranked as Moderate (4).

Indirect impacts to commercial fisheries

As identified in Section 4.4.1, commercial fisheries have management areas and recent fishing effort recorded within the Hydrocarbon EMBAs. Direct impacts to commercially targeted fish species are expected to occur from in-water exposures.

Stochastic modelling showed that dissolved and entrained oil above impact thresholds (≥50 ppb and 100 ppb respectively) was predicted to occur; however, was predicted to remain in the surface layers, with no exposure at depths >20 m below the surface predicted to occur during any season. As described above, very few studies have demonstrated increased mortality of fish as a result of oil spills. However, fish stocks may be especially vulnerable to oil spills close to the spawning grounds or egg and larval drift areas (Ref. 145; Ref. 342). Fish eggs and larvae are typically vulnerable to toxic oil compounds due to their small size, poorly developed membranes and detoxification systems as well as their position in the water column (Ref. 342). Despite potential mortality of eggs and larvae following a spill, subsequent depletion of adult wild fish stocks is rarely recorded (Ref. 147).

As identified in Section 4.4.1.1, the spawning grounds for the EPBC Act listed conservation dependent Southern Bluefin Tuna intersects with the Hydrocarbon Ecological EMBA. As such, the available deterministic analyses from the hydrocarbon spill modelling were utilised to understand the potential extent and duration of exposure to these spawning grounds.

The deterministic analysis for the largest area of entrained hydrocarbons (from the State waters boundary scenario) indicates that entrained hydrocarbons concentrations ≥100 ppb are present for <10 days following the spill event, with a maximum area of coverage of ~75 km^2 occurring ~4 days after the spill commenced. Based on the spatial extent of the approximate Southern Bluefin Tuna spawning ground (~1,850,534 km^2), modelling indicates that the extent of entrained exposures was predicted to be limited to ~0.004% of the entire spawning ground.

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. 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. 154). Regardless of the small potential for tainting, if tainting occurs, or there is a customer perception that tainting has occurred, this 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, actual or perceived occurrences of tainting 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 localized and short term and it is ranked as Minor (5).

Reduction in amenity resulting in impacts to tourism and recreation

Stochastic modelling predicts shoreline exposure ≥10 g/m^2 (visible impact threshold) from a vessel spill event has the potential to occur along the Montebello and Barrow islands, with smaller/patchier occurrences along some of the other Pilbara inshore islands, and North West Cape peninsula and Cape Preston mainland coasts, depending on the environmental conditions at the time of the event.

The deterministic model for the largest volume of oil ashore above ≥10 g/m^2 (from the State waters boundary scenario) predicted the largest volume of oil ashore as 227.2 m^3 on Barrow Island occurring ~2 days after the spill commenced. Stochastic modelling also showed that the longest length of shoreline with exposure of ≥10 g/m^2 is ~36 km.

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 localised disturbance to marine tourism and recreation activities, CAPL has ranked the consequence as Minor (5).

Changes to values and sensitivities of marine protected areas

Stochastic modelling for the State waters boundary scenario predicts surface exposure ≥10 g/m^2 and entrained exposure ≥100 ppb from a vessel spill event as having a high probability (74-89% and 76-89% respectively) of occurrence within the Commonwealth Montebello Marine Park (Table 7-16). Modelling predicted a low probability (<6%) of entrained oil exposure within the Gascoyne and Ningaloo Marine Parks (Table 7-16).

Modelling also predicted a moderate probability (11-50%) of entrained oil exposure within the 0 – 10 m water depth layer during summer, winter and transitional seasons to the State Montebello Island Marine Park (Table 7-16).

Given the much higher probability of exposure, the following evaluation is focused on the Commonwealth Montebello Marine Park.

As identified in Section 4.5.1, the natural values of the Montebello Marine Park include species listed as threatened, migratory, marine, or cetacean under the EPBC Act, as well as any identified BIAs for regionally significant marine fauna. Social and economic values of the Montebello Marine Park include commercial fishing.

The consequence evaluations for marine fauna and commercial fisheries are provided above.

Given the expected behaviour and weathering of the oil, limited spatial and temporal exposure to marine fauna or commercial fish species above impact exposure thresholds, the potential impacts of a vessel spill event to the values and sensitivities of the Montebello Marine Park has been ranked as Moderate (4).

Changes to cultural heritage value

As discussed in Section 4.6 there are heritage listed places or sites within the Hydrocarbon EMBAs, including World and National heritage listed Ningaloo Coast, and Commonwealth listed Ningaloo marine area, Native Title determination areas, as well as several protected First Nation sites or artefacts along (or adjacent to) the coast of the North West Cape peninsula.

Protected UCH sites have been identified within the EMBA; these sites are related to shipwrecks, with no other types (e.g. aircraft or other artefacts) identified (Section 4.6.2). Given known sea level history, parts of the Hydrocarbon EMBAs (e.g. those <125 m water depth) would have been emergent land during the extended history of First Nations occupation of Australia. At the time of writing this EP, 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 values associated with the seabed within the Hydrocarbon EMBAs (Section 4.6.2 and 6). Stochastic modelling did not predict interaction with seabed in offshore waters. Therefore, no impacts to seabed-based UCH (e.g. shipwrecks or archaeology), including First Nations UCH, are expected.

As identified from literature and/or consultation (Section 4.3.5.2.1), 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. 184; Ref. 314). Specific tangible values of Sea Country identified through literature and/or consultation include:

- marine fauna (e.g. whales, dugongs, turtles)
- offshore islands (e.g. Barrow Island) and parts of the mainland coast (e.g. Ningaloo Coast)
- Biggada Creek on Barrow Island
- marine resources (e.g. fish).

The consequence evaluations to marine fauna (including fish) are provided above and were assessed as having a moderate environmental impact. Further, as described in the above evaluations, if an unplanned hydrocarbon (marine fuel) release did occur it is not expected to have an effect at population-levels.

BTAC identified that the Thalanyji people have a deep connection to a number of the Pilbara inshore islands (Table 4-15). Depending on the environmental conditions at the time of the spill event, of the named islands within the Hydrocarbon EMBAs, Montebello and Barrow islands may be exposed to shoreline loading above the visible impact threshold (≥10 g/m^2) and the ecological impact threshold (≥100 g/m^2); and Thevenard (part of Mackerel Islands group) and Airlie Island may be exposed to shoreline loading above the visible impact threshold (≥10 g/m^2). The consequence evaluations to shoreline habitats and marine fauna are provided above and were assessed as having a moderate environmental impact. Deterministic analysis for the largest volume of oil ashore (from the State waters boundary scenario) indicates that the minimum time before shoreline hydrocarbons concentrations ≥10 g/m^2 are present, was <1 day following the spill event, with a maximum volume ashore of ~227.2 m^3. Stochastic modelling also showed that the longest length of shoreline with exposure of ≥10 g/m^2 is ~36 km. Shoreline loading can impact the visual amenity of coastal areas and limit beach access for users. However, if shoreline contact occurs, it is expected that any impacts from this type of event would be non-continuous short term in duration and will result in a limited volume ashore. As such, given the volume, type of oil (marine fuel) and predicted weathering, no prolonged impact pathway to a change in access to Country is anticipated.

Biggada Creek on Barrow Island was identified as significant by MCH (Table 4-15); the mouth of Biggada Creek is located on the west coast of Barrow Island. Depending on the environmental conditions at the time of a spill, shoreline exposure on the west coast of Barrow Island was predicted to occur. However, if oil is deposited ashore, this only occurs up to high-water level. As such, exposure to Biggada Creek itself is expected to be negligible.

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 recognize as part of their cultural heritage” (Ref. 348). Specific intangible values of Sea Country identified through consultation included Dreamtime stories and songlines (Table 4-15). In particular, representatives from MCH identified the existence of songlines that go through Barrow Island and offshore (Table 4-15). Note: for further description of songlines and associated access and connection to Country, refer to the description provided previously in Section 7.2.

Given the volume, type of oil (marine fuel) and predicted weathering, no prolonged impact pathway to a change in access to Country is anticipated. The consequence evaluations to marine fauna are provided above and were assessed as having a moderate environmental impact to a proportion of the population—if they are present within the area at the time of a spill. As such, it is anticipated that intangible heritage values such as songlines and connection to Country would not be significantly adversely affected in the long-term from an unplanned hydrocarbon (marine fuel) release within the OA.

Given the expected behaviour and weathering of the oil (marine fuel), limited spatial and temporal exposure, only a relatively small area is expected to be exposed due to a single spill event. However, it is acknowledged that the sea and coast that may be exposed could represent important cultural heritage values. Therefore, the potential impacts of oil (marine fuel) to cultural heritage values attributed to the offshore marine area has been has been ranked as Moderate (4).

ALARP decision context justification

Offshore vessel operations are commonplace 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 relevant persons consultation, a claim regarding the risk of disruption to songlines was received. This claim was responded to by CAPL (see summary in ‘external context’ below, and within appendix d).

Modelling was undertaken to support the environmental risk evaluation and remove some of the uncertainty associated with this aspect. 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	
Control measure	**Description**
Marine Standard	Chevron's *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) 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.
Watchkeeping	Marine Order 28—Operations standards and procedures sets out requirements and responsibilities for vessel crew, including watchkeeping standards.
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.
Automatic identification system (AIS)	Marine Order 27—Safety of navigation and radio equipment sets out requirements for safe navigation, radio equipment and communications. The AIS is a maritime communications device, and AIS equipped vessels (shipborne AIS) can use it to send and receive identifying information. This identifying information can be displayed on an electronic chart, computer display, chart plotter or compatible navigation radar. As such, this identifying information can: • aid in situational awareness • provide a means to assist in collision avoidance.
Maritime safety information	Maritime safety information, such as AUSCOAST navigational warnings, are issued by the 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. Maritime safety information (radio-navigation warnings 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 vessels (as appropriate to vessel class) 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 OPGGS(E)R, NOPSEMA require that the petroleum activity have an accepted OPEP in place before commencing the activity. If a vessel collision occurs, the OPEP will be implemented. CAPL has developed an OPEP (Ref. 2) to support all spill response activities across all its assets.

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 OSMP (Ref. 3) to support all spill monitoring activities across all its assets.	
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 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). 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.	
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)	
Determination of acceptability		
Principles of ESD	The potential risk 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 Moderate (4), and subsequently the potential for serious or irreversible environmental damage is not expected. 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) • *Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth)* • Marine Order 27—Safety of navigation and radio equipment • Marine Order 28—Operations standards and procedures • Marine Order 30—Prevention of collisions • Marine Order 91—Marine Pollution Prevention—oil	

- *Conservation Management Plan for the Blue Whale 2015–2025* (Ref. 60)
- *Conservation Advice Balaenoptera borealis Sei Whale* (Ref. 59)
- *Conservation Advice Balaenoptera physalus Fin Whale* (Ref. 58)
- *Conservation Management Plan for the Southern Right Whale* (Ref. 345)[47]
- *Conservation Advice for the Whale Shark 2015–2020* (Ref. 57)
- *Recovery Plan for Marine Turtles in Australia* (Ref. 56)
- *Conservation Advice for Dermochelys coriacea (Leatherback Turtle)* (Ref. 14)
- Approved Conservation Advice for Aipysurus apraefrontalis (Short-nosed Sea Snake) (Ref. 302)
- *Approved Conservation Advice for Aipysurus foliosquama (Leaf-scaled Sea Snake)* (Ref. 303)
- *North-west Marine Parks Network Management Plan* (Ref. 67).

CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.

Requirement	Demonstration
Navigation Act 2012 Notice to Mariners	Requirement to issue a Notice to Mariners has been incorporated into the **maritime safety information** control measure.
Navigation Act 2012 (Cth) Vessel watchkeeping as per Marine Order 28	Vessel watchkeeping requirements has been incorporated into the **watchkeeping** control measure.
Navigation Act 2012 (Cth) Use of lights and signals as per COLREGS and Marine Order 30	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.
Navigation Act 2012 (Cth) Use of AIS as per Marine Order 27	The use of shipborne AIS has been incorporated into the a**utomatic identification system** 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 / Shipboard Marine Pollution Emergency Plan** 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	N/A

[47] A draft National Recovery Plan for the Southern Right Whale was release for comment in early-2023; a finalised version of this Recovery Plan is not yet available.

	No specific conservation action identified.	
	Conservation Management Plan for the Southern Right Whale 2011–2021 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. 2). Response and recovery of habitats and marine fauna is within the scope of the OSMP (Ref. 3). Therefore, this activity is not considered to be inconsistent with the *Recovery Plan for Marine Turtles in Australia.*
	Approved Conservation Advice for Dermochelys coriacea (Leatherback Turtle) 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
	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 is 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 8.4.2. 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. 36) • OPEP (Ref. 2)	

<table>
<tr><td></td><td>
OSMP (Ref. 3).
Control measures related to each of the above management processes or procedures have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.
</td></tr>
<tr><td>External context</td><td>
During relevant persons consultation, a claim regarding the risk of disruption to songlines was received (appendix d). CAPL responded confirming:

intangible heritage, including songlines, 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.

No further objections or claims were raised regarding a vessel collision event arising from the petroleum activity.
</td></tr>
<tr><td>Defined acceptable level</td><td>
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.
However, in alignment with Section 5.6.2, 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>Conservation Management Plan for the Southern Right Whale 2011–2021</td><td>Recovery objective: Minimise anthropogenic threats to allow the conservation status of the southern right whale to improve so that it can be removed from the threatened species list under the EPBC Act.
Interim objective 5 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>North-west Marine Parks Network Management Plan 2018</td><td>As per Section 4.5.1.</td></tr>
</table>
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 adverse change to the values of the Montebello Marine Park.

</td></tr>
</table>

	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 AMP are also subsequently managed.	
Environmental performance outcome	**Environmental performance standard**	**Measurement criteria**
No unplanned release of hydrocarbons or hazardous materials to the environment during the petroleum activity No adverse change to the values of Australian Marine Parks from the petroleum activity No adverse change to First Nations cultural heritage values from the petroleum activity	**Marine Standard** Vessel crews will meet the minimum competency requirements as per the Chevron Marine Standard	Records indicate that vessel crews meet the minimum competency requirements of the Chevron Marine Standard
	Watchkeeping Vessels will implement watchkeeping standards in accordance with Marine Order 28	Records indicate that watchkeeping was undertaken in accordance with the requirements of Marine Order 28 during the petroleum activity
	Vessel lights and signals In accordance with regulatory requirements, vessels will implement light and signals appropriate to the nature of their operations	Records indicate that vessel lights and signals were consistent with the requirements of COLREGS and the *Navigation Act 2012 (Cth)* during the petroleum activity
	Automatic identification system Vessels will use shipborne AIS during the petroleum activity	Records indicate that shipborne AIS was used by the vessel/s during the petroleum activity
	Maritime safety information Notify relevant agency 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	Record of lodgement of notification to relevant agency
	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

Reduce the risk of impacts to the environment from the unplanned release of hydrocarbons or hazardous materials during the petroleum activity	**SOPEP** Marine vessels (as appropriate to vessel class) 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
		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
	Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies) In the event of a spill occurring, CAPL will engage with relevant First Nations people and/or representative bodies	Relevant persons consultation records

7.16 Unplanned release—hydrocarbon system

7.16.1 Scenario

A dropped object risk assessment was completed (Ref. 281) to understand the potential outcomes of a dropped object within the vicinity of existing third-party subsea infrastructure (i.e. Wheatstone trunkline, East Spar pipeline; Table 3-3) during the installation of the shallow water crossings. The following potential dropped objects scenarios were determined to have the impact energy required to potentially cause a hydrocarbon release:

- dropped mattress installation frame
- dropped crane swivel block and hook.

Given the loss of containment is associated with third-party infrastructure, no consequence evaluation (or associated spill response preparation or capabilities) has been carried forward in this EP. However, CAPL has included control measures within Section 7.12 addressing dropped object management (including lifting procedures and crossing agreements).

A dropped object risk assessment was also completed (Ref. 280) to understand the potential outcomes of a dropped object within the vicinity of existing GFP infrastructure. The following dropped object scenario was determined to have the impact energy required to potentially cause a hydrocarbon release:

- dropped infrastructure at the Jansz MPTS.

This identified LOC risk is associated with the existing Jansz production pipeline. As a conservative approach for this risk assessment, a full-bore rupture of the

Jansz pipeline (at the approximate location of the Jansz MPTS) has been selected for use as a worst-case event. This scenario has been carried forward for further assessment.

Previous modelling was undertaken by Intecsea (Ref. 291) to understand potential volumes released during a full-bore pipeline rupture. Model calculations were based upon:

- maximum allowable operating pressure (MAOP) of the pipeline
- water depth at the release location (and subsequent pressure differential)
- time to detect defect and enact emergency procedures
- time for pipeline to equalise with the ambient pressure at the release location.

The outcomes of this modelling determined that for a pipeline rupture event at the approximate location of the Jansz MPTS, the estimated volume of condensate released was 276 m^3 (Ref. 291).

7.16.2 Spill modelling

CAPL commissioned RPS to conduct spill modelling to inform the risk assessment associated with a full-bore rupture event of the Jansz pipeline at the approximate location of the Jansz MPTS.

Two models were used as part of the spill modelling (Ref. 124):

- OILMAP-DEEP was used to simulate the nearfield multiphase plume rise dynamics from the subsea release
- SIMAP, a three-dimensional oil spill model was used to simulate the drift, spread, weathering and fate of the spilled oil.

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 7-17 summarises the model settings; Table 7-18 summarises the hydrocarbon properties for Gorgon condensate; and Table 7-14 (in Section 7.15) describes the modelled environmental impact thresholds.

Table 7-17: Pipeline rupture spill scenario model settings

Parameter	Details
Release Location	Jansz-Io field
Latitude	19º48’34.09” S
Longitude	114º36’26.52” E
Water Depth	1,345 m
Oil type	Jansz condensate
Simulation spill type	Subsea
Simulation spill volume	276 m^3
Simulation spill duration	7.2 hours
Total simulation duration	28 days
Number of randomly selected spill simulation start times	100 per season (300 total)

Parameter	Details
Seasons modelled	Summer (September to March) Transitional (April and August) Winter (May to July)

Table 7-18: Physical properties and boiling point ranges for Jansz condensate

Characteristic	Value			
Density	772.8 kg/m^3 (at 25 °C)			
Dynamic viscosity	1.2 cP (at 25 °C)			
Pour point	-81 °C			
API gravity	51.4 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
	72.5%	13.0%	14.0%	0.5%

7.16.2.1 Weathering and fate

Jansz condensate is non-persistent oil, with a density of 772.8 kg/m^3, an API of 51.4, and a low pour point (−81 °C) (Table 7-18). The low viscosity (1.2 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, 72.5% of the Jansz condensate mass should evaporate within the first 12 hours (boiling point <180 °C); a further 13.0% should evaporate within the first 24 hours (boiling point 180°C–265 °C); and an additional 14% should evaporate over several days (boiling point 265°C–380 °C). Approximately 0.5% (by mass) of Jansz condensate will not evaporate at atmospheric temperatures. These compounds will persist in the environment.

7.16.2.2 Modelling outputs

A summary of the stochastic modelling outcomes (Ref. 124) from the the modelled 276 m^3 Jansz pipeline rupture within the Jansz-Io field:

- the maximum distance from the release location to the ≥1 g/m^2 visible impact threshold was ~28 km west-northwest (summer)
- no surface oil was predicted to occur at the ≥10 g/m^2 ecological impact threshold
- no shoreline accumulation above visible (≥10 g/m^2) or ecological (≥100 g/m^2) impact thresholds was predicted to occur during any season
- no dissolved oil above the impact threshold (50 ppb) was predicted to occur during any season
- no entrained oil above the impact threshold (100 ppb) was predicted to occur during any season.

7.16.3 Risk assessment

Source

Activities identified as having the potential to result in an unplanned release from the hydrocarbon system are:

- installation—dropped infrastructure during installation activities at the Jansz field.

Potential impacts and risks

Impacts	C	Risks	C
N/A	—	The potential environmental impacts associated with hydrocarbon exposures from a hydrocarbon system event are: • reduction in amenity resulting in impacts to tourism and recreation.	–

Consequence evaluation

Reduction in amenity resulting in impacts to tourism and recreation

Stochastic modelling predicted a visible (≥10 g/m^2) surface exposure extending up to ~28.5 km from the discharge location in the Jansz field. No shoreline contact was predicted to occur.

Given the location of the Jansz field is >100 km from the closest coast (Montebello Islands), negligible tourism and recreational activities are expected to be occurring in this area. As such, the visible surface sheen is not expected to impact on the visual amenity or adversely affect tourism or recreational activities, and therefore has not been evaluated further.

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 pipeline rupture 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 relevant persons consultation, no objections or claims were raised regarding unplanned hydrocarbon release events arising from the petroleum activity.

The risks associated with an unplanned hydrocarbon release 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

Control measure	Description
Lifting procedure	Prior to commencement of the petroleum activity, the *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) is used to verify that all vessels undertaking complicated, complex, or heavy lifts have a Lifting Procedure (or equivalent) in place that complies with the requirements of the *Managing Safe Work (MSW) ABU Standardised OE Process* (Ref. 35).
Source control	Source control is part of the first actions taken stabilize the volume of hydrocarbon released and therefore reduce potential impacts and risks to the environment. CAPL has developed Emergence Operating Procedures (EOPs) (Ref. 155) that provides guidance to operations personnel to detect, isolate and stabilize non-routine events such as trunkline/flowline loss of containment scenarios.
OPEP	Under the OPGGS(E)R, NOPSEMA require that the petroleum activity have an accepted OPEP in place before commencing the activity. If a vessel collision occurs, the OPEP will be implemented.

	CAPL has developed an OPEP (Ref. 2) to support all spill response activities across all its assets.	
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 OSMP (Ref. 3) to support all spill monitoring activities across all its assets.	
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. 156) was used to evaluate the likelihood of a loss of containment from an individual offshore pipeline, which was determined to be equivalent to 0.189% per year (Ref. 157). This frequency was used as a guide to inform the likelihood of consequence. Given these statistics are based on incident history, largely for North Sea and European operations, their use is considered conservative given the geographically remote location of the Gorgon and Jansz Feed Gas Pipeline and the reduced risk of potential external interference. Because of the low probability of a pipeline rupture event, 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: • Marine Order 91—Marine pollution prevention—oil CAPL considers that impact and risk management is consistent with these requirements, as demonstrated below.	
	Requirement	**Demonstration**
	Marine Order 91 Gives effect to Annex I of MARPOL 73/78	Requirements for a vessel to have a SOPEP have been incorporated into the **SOPEP / Shipboard Marine Pollution Emergency Plan** control measure
Internal context	These CAPL management processes or procedures were deemed relevant for this aspect: • OPEP (Ref. 2) • OSMP (Ref. 3). Control measures related to each of the above management processes or procedures have been described for this aspect. As	

	such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.	
External context	During relevant persons consultation, no objections or claims were raised regarding major defect events arising from the petroleum 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 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	**Environmental performance standard**	**Measurement criteria**
No unplanned release of hydrocarbons or hazardous materials to the environment during the petroleum activity	**Lifting procedure** If a vessel is undertaking complicated, complex, or heavy lifts, a Lifting Procedure (or equivalent) will be in place prior to activities commencing that complies with the requirements of the *Managing Safe Work (MSW) ABU Standardised OE Process*	Records confirm that a Lifting Procedure (or equivalent) is in place prior to complicated, complex, or heavy lifts being undertaken.
Reduce risk of impacts to the environment from the unplanned release of hydrocarbons or hazardous materials during the petroleum activity	**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
	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

7.17 Spill response

7.17.1 Response option selection

7.17.1.1 Strategic NEBA

CAPL has developed a series of Strategic Net Environmental Benefit Analysis (NEBAs) (Ref. 158) 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. 159). 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.

7.17.1.2 Protection prioritisation process

CAPL has developed a Protection Prioritisation Process (PPP) (Ref. 160) 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. 160) 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. 160) aligns with Western Australian (WA) Department of Transport (DoT) PPP (Ref. 161) 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. 160)) 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.160), 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 7-19 below. 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 7-19: Priority planning areas for MDO spill scenario*

Potential Area of Impact	Distance from Source of Spill	Shoreline Values	Planned Response Tactics
DoT Shoreline Cell # 320 and #321 (Barrow Island)	~5 km	Turtles – BIAs including nesting Seabirds – BIAs including breeding Coral and reef communities Marine protected areas	Monitor, Evaluation and Surveillance Shoreline Protection and Deflection Shoreline Clean-up Oiled Wildlife Response
Dot Shoreline Cell # 318 (Montebello Islands) and #319 (Lowendal Islands)	~20 km	Turtles – BIAs including nesting Seabirds – BIAs including breeding Mangroves Coral and reef communities Marine protected areas	Monitor, Evaluation and Surveillance Shoreline Clean-up Oiled Wildlife Response

* Note that the modelling for both Gorgon and Jansz-Io vessel collision did not predict any impact to High and Very High ranked areas within 4 days.

7.17.2 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 – Jansz condensate
- Group 2 –MDO.

The outcomes of the Strategic NEBA are outlined in Table 6-1 of the OPEP (Ref. 2). Taking into account the priority planning areas identified in Table 7-19 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.

7.17.3 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. 2).

7.17.3.1 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:

1. Review the Strategic NEBA (Ref. 158) and priority planning areas to understand the planned response to an event
2. 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 .
3. Review the number of response packages available to determine if the capability exists.

7.17.3.2 CAPL planned response: vessel collision

In accordance with the Strategic NEBA (Ref. 158), 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 2).

Implement MES response

A MES response will commence for every spill to water 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. 2) 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

For a spill event such as this (a non-continuous release), deterministic analysis indicates shoreline accumulation can occur rapidly. CAPL will implement strategies to protect prioritised values and sensitivities; however, these strategies may be targeted and/or limited pending location and environmental conditions.

Deterministic analysis for the largest volume of oil ashore (from the State waters boundary scenario) indicates that 227.2 m^3 may wash ashore within ~2 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. 2), each protection team is expected to recover 15.6 m^3 of hydrocarbon per day. On the assumption that 227.2 m^3 washes ashore on the second day, CAPL would need up to 15 SPD packages available

on day two to implement the SPD response. However, modelling suggests there would only be a very short window to implement SPD on the west coast of Barrow Island (<2 days). This short timeframe, coupled with the remoteness, access constraints and the high energy environment of the west coast of Barrow Island would likely result in limited effectiveness. Regardless, a SPD response could be targeted at accessible areas of lower energy with known environmental sensitives, such as turtle nesting beaches. Based upon these conditions, from a tactical planning perspective, CAPL would likely deploy 3 SPD teams on day 2, and ramp up these resources if required to 5 SPD by the end of the first week.

Confirmation that CAPL has the arrangements in place to implement the required number of packages is provided in Table 7-20.

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 (from the State waters boundary scenario) indicates that 227.2 m^3 may wash ashore within ~2 days after release. This scenario predicted exposure to the west coast of Barrow Island.

The west-coast of Barrow Island comprises:

- high energy wave environment
- high / steep rocky cliffs
- very limited vehicle access.

From a tactical planning perspective, based upon these conditions, it is unlikely that a shoreline clean-up would be feasible along most of the west coast. Consequently, priority areas for clean-up would be those west coast bays / beaches accessible by vehicles or vessels and those that support turtle nesting populations. Regardless, a conservative planning approach taken by CAPL is that it would attempt to clean up the entire volume of oil washed ashore.

Based on Appendix C of the OPEP (Ref. 2), each SHC team is expected to recover 1.6 m^3 of hydrocarbon per day. If four clean-up teams are mobilised on day 3 and used each day, all hydrocarbons can be recovered within 35 days. If required, these efforts could be ramped up as directed and informed by MES activities.

Table 7-20: 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	1	1	
Does CAPL have the required capability?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
No. packages – planned SPD	0	3	3	3	3	3	5					

Response Technique	Days Following Event							Weeks Following Event				
	1	2	3	4	5	6	7	2	3	4	5	6
Does CAPL have the required capability?		Y	Y	Y	Y	Y	Y					

No. packages – planned SHC	0	4	4	4	4	4	4	4	4	4	4	
Does CAPL have the required capability?		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	

7.17.3.3 CAPL planned response: hydrocarbon system release

In accordance with the Strategic NEBA (Ref. 158), the response strategies proposed to be used for this spill scenario and response package calculations are described below. As hydrocarbon exposure above impact thresholds (except for a visible surface threshold) were not predicted to occur, no active response strategies (Offshore CAR, SPD, SHC) are proposed.

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. 2) has documented the arrangements that CAPL have in place to implement all the required MES tactics; therefore, this technique is not discussed further.

7.17.4 Spill response environmental risk assessment

7.17.4.1 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 (vessel collision resulting in a release of 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 or 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
		Changes to cultural heritage values	5

Consequence evaluation

Changes to terrestrial habitats and/or fauna

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.

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).

Changes to cultural heritage values

As discussed in Section 4.6 there are heritage listed places or sites within the Hydrocarbon EMBAs, including the World and National heritage listed Ningaloo Coast, Native Title determination areas, as well as several protected First Nation sites or artefacts along (or adjacent to) the coast of the North West Cape peninsula. However, if SPD or SHC were selected for implementation during a spill response these are likely to occur at sites closer to the spill location (and subject to higher shoreline oil loading) such as Barrow and/or Montebello islands (Sections 7.17.2 and 7.17.3); i.e. not along the Ningaloo Coast area.

Without proper planning, there is potential for SPD and SHC to result in changes to tangible and intangible cultural heritage values. As such, CAPL has ranked the consequence for changes to cultural values as Minor (5), consistent with that for SPD and SHC.

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 relevant persons 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

Control measure	Description
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. 3) 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.
Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies)	As part of ongoing consultation (as required by regulation 22(15) of the OPGGS(E)R, and described in Section 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). In the event that a hydrocarbon spill event occurs and is considered likely to affect the functions, interests, or activities of First Nations people and/or representative bodies, CAPL will engage with First Nations people and/or representative bodies as soon as practicable within an emergency response (Table 8-14).
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)
Determination of acceptability	
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 management processesor procedure was considered relevant for this aspect: • OSMP (Ref. 3). Control measures related to the above management process or procedure have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.
External context	During relevant persons consultation, 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 outcomes	Environmental performance standard	Measurement Criteria
Reduce the risk of impacts to the environment during event response No adverse change to First Nations cultural heritage values from the petroleum activity	**OSMP** In the event of a spill occurring, the OSMP will be implemented	Records confirm the OSMP has been implemented
	Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies) In the event of a spill occurring, CAPL will engage with relevant First Nations people and/or representative bodies	Relevant persons consultation records

7.17.4.2 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 (vessel collision resulting in a release of 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
		Changes to cultural heritage values	5

Consequence evaluation

Harm to oiled fauna

Environmental values and sensitivities 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 Ningaloo coast and Barrow and 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).

Changes to cultural heritage values

As identified from literature and/or consultation (Section 4.3.5.2.1), Sea Country is a value for First Nations people. One of the specific tangible values of Sea Country identified through consultation was marine fauna (e.g. whales, dugongs, turtles; Table 4-15).

CAPL considers that indirect impacts to First Nations cultural values associated with marine fauna may occur due to OWR. As such, CAPL has ranked the consequence for cultural values as Minor (5), consistent with that for OWR.

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 relevant persons 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 to this aspect.

Good practice control measures

Control measure	Description
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. 3) 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.
Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies)	As part of ongoing consultation (as required by regulation 22(15) of the OPGGS(E)R, and described in Section 8.3.4) CAPL will continue to engage with First Nations people and/or representative bodies. This ongoing consultation relates to both the specific petroleum activity (Table 8-5) as well as broader engagement and relationship building (Section 8.3.4.3). In the event that a hydrocarbon spill event occurs and is considered likely to affect the functions, interests, or activities of First Nations people and/or representative bodies, CAPL will engage with First Nations people and/or representative bodies as soon as practicable within an emergency response (Table 8-14).

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)	
Determination of acceptability		
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 management processes or procedure considered relevant for this aspect is: • OSMP Control measures related to the above management process or procedure have been described for this aspect. As such, CAPL considers that impact and risk management is consistent with company policy, culture, and standards.	
External context	During relevant persons consultation, 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	**Environmental performance standard**	**Measurement criteria**
Reduce the risk of impacts to the environment during event response No adverse change to First Nations cultural heritage values from the petroleum activity	**OSMP** In the event of a spill occurring, the OSMP will be implemented	Records confirm the OSMP has been implemented
	Relevant persons consultation—Ongoing consultation (First Nations people and/or representative bodies) In the event of a spill occurring, CAPL will engage with relevant First Nations people and/or representative bodies	Relevant persons consultation records

8 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 activity are continuously reduced to ALARP and the environmental performance outcomes and standards detailed in Section 7 are achieved.

CAPL, as nominated titleholder, is responsible for ensuring the petroleum activity within scope of this EP is managed in accordance with this implementation strategy. The vessel contractors will be required to comply with the requirements of this EP to ensure that the environmental performance outcomes and standards are achieved.

8.1 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 system - Requirements with guidance for use* (Ref. 34) 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 8-1):

- **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 8-1) 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 8-1) provides the verification and validation that the safeguards are in place and functioning as intended.

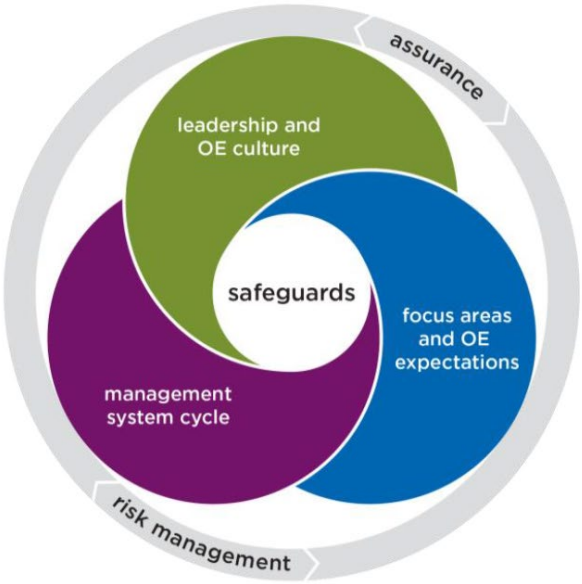


Figure 8-1: Overview of Chevron Corporation's OEMS

8.2 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.

8.2.1 Roles and accountability

CAPL leaders have the overall accountability for the implementation of the OEMS.

8.2.1.1 Chain of command (petroleum activity)

As required under regulation 22(3) of the OPGGS(E)R, a clear chain of command for implementing the petroleum activity is outlined in Figure 8-2.

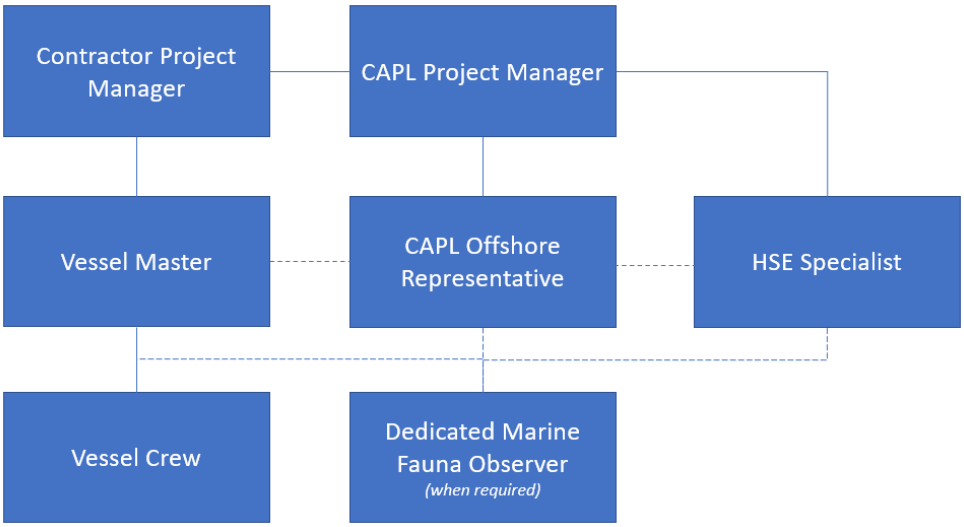


Figure 8-2: Chain of command—petroleum activity

8.2.1.2 Roles and responsibilities (petroleum activity)

The roles and responsibilities of key CAPL and contractor personnel for implementing task-specific control measures are detailed in Section 6, and are summarised in Table 8-1.

Table 8-1 Key roles and responsibilities—petroleum activity

Roles	Responsibilities
CAPL Project Manager	• Overall responsibility for implementing, managing, and reviewing this EP Ensure that: • third-party vessels or contractors are aware of any requirements within this EP, including completion of relevant inductions as per Section 8.2.1.3 • ongoing consultation is conducted in accordance with Section 8.3.4.1 • any MoC is conducted in accordance with Section 8.3.2.2, and notify the CAPL Offshore Representative and HSE Specialist of any scope changes where relevant • environmental incident reporting is completed in accordance with Section 8.4.2 • routine environmental reporting is undertaken in accordance with Section 8.4.3
Contractors Project Manager	• Overall responsibility for contractors implementing requirements under this EP Ensure that: • all contractor personnel are aware of their requirements within this EP, including completion of relevant inductions as per Section 8.2.1.3 • sufficient resources are provided to enable compliance with the requirements of this EP • confirm vessels comply with relevant legislative requirements • corrective actions identified during environmental inspections are implemented (as required) • assist with review, investigation, and reporting of environmental incidents (as required)
CAPL Offshore Representative	Ensure that: • all CAPL personnel have completed necessary inductions which includes awareness of the requirements under this EP • impacts and risks are continually reduced to ALARP and an acceptable level by implementing this EP in accordance with Sections 7 • pre-mobilisation inspections of vessels are undertaken to confirm they comply with all requirements under this EP • corrective actions identified during environmental inspections are closed out in accordance with Section 8.3.6 • seabird management procedure is implemented • UCH finds protocol is implemented • all incidents, including breaches of environmental performance standards, are reported to Project Manager
CAPL HSE Specialist	Ensure that: • all personnel are made aware of their requirements under this EP • impacts and risks are continually reduced to ALARP and an acceptable level by implementing this EP in accordance with Section 7 • all changes to this EP are subject to a MoC assessment as described in Section 8.3.2.2 • compliance with this EP is verified in accordance with Section 8.3.6, including:

Roles	Responsibilities
	– environmental inspections – collection of evidence against environmental performance standards – regularly review compliance with environmental performance standards – preparation of environmental performance report following completion of activity • assist with review, investigation, and reporting of environmental incidents (as required) • this EP is reviewed in accordance with Section 8.5 • preparation of cetacean sighting report at the end of the petroleum activity (Section 8.4.1.1).
Vessel Master	Ensure that • impacts and risks are continually reduced to ALARP and an acceptable level by implementing this EP in accordance with Section 7 • all necessary vessel-related documentation (e.g. SOPEPs, certificates, etc.) is available in accordance with Section 7 • all marine safety information notifications are issued in accordance with Section 7 • vessel operations are being conducted in accordance with the legislative requirements and this EP, including waste management, refuelling, and emergency/oil spill response • maintenance of equipment and records meet statutory requirements • establish and maintain radio contact with other vessels in the OA and adjacent waters • vessels implement cetacean interaction requirements in accordance with EPBC Regulations 2000 and additional marine fauna separation distances as per requirements of this EP • report any seabird landings on vessel to CAPL Offshore Representative • report any potential UCH finds to CAPL Offshore Representative • all incidents are immediately reported to CAPL Offshore Representative • all emissions and discharges are monitored and recorded in accordance with Sections 7 • a Vessel Master (or delegate) is on duty at all times
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 7 of this EP • report any seabird landings on vessel to the Vessel Master.
Dedicated Marine Fauna Observer	• Provide an information session to vessel control room operators and other essential personnel at the start of the campaign regarding their fauna observation duties and the communication protocols required • Provide awareness training for bridge-watch crew on vessels prior to activities commencing • Undertake visual observations for marine fauna in accordance with Section 7 • Provide advice to the CAPL Offshore Representative and Vessel Master (or delegate) regarding observed marine fauna presence and behaviour • Record and report all sightings of marine fauna to the HSE Specialist

Roles	Responsibilities
	• Preparation of daily, and end of survey marine fauna monitoring reports • Maintain MFO observation logs, including details of any sightings, and mitigation actions • Assist HSE Specialist with compliance verification as required • Assist HSE Specialist with incident reporting as required.
ROV operator	Ensure that: • UCH finds protocol is implemented.

8.2.1.3 Training and competency (petroleum activity)

In accordance with regulation 22(4) of the OPGGS(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.

The vessel contractors will provide marine crew who are trained and competent to undertake their respective activities on board the vessel. All marine personnel will be qualified in accordance with the International Convention on Standards of Training Certification and Watch Keeping for Seafarers (STCW95).

Where a Dedicated MFO is required to be on board an installation vessel (as per control measures identified in Section 7.6), they will meet the minimum experience requirements as per Table 8-2.

Personnel with specific responsibilities under this EP (refer to Section 8.2.1.2) 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 that are relevant to their role (Table 8-2).

Table 8-2: Inductions—petroleum activity

Training/ competency	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 • roles and responsibilities of vessel crew members • cetacean interaction requirements under Part 8 of the EPBC Regulations 2000 and additional marine fauna separation distances as per requirements of this EP

Training/ competency	Required personnel	Scope
		• seabird management procedure for night vessel-based activities • overview of requirements of UCH finds protocol • good waste management and hazardous materials housekeeping requirements • incident reporting requirements (including definitions and reporting pathways) • incident response arrangements.
UCH	ROV operators	Before commencing the petroleum activity, ROV operations will be provided with a UCH-specific induction. This induction will include an overview of the identification of potential UCH sites or artefacts, and the specific management requirements of the UCH finds protocol.
MFO certification	Dedicated MFO	The Dedicated MFO/s must have completed an MFO (or marine mammal observer) training course. MFOs will be trained in whale identification and behaviour, distance estimation, and be capable of making accurate identifications and observations of whales in Australian waters.
MFO competency	Dedicated MFO	The Dedicated MFO will have had previous experience in: • offshore marine campaigns in Australia or New Zealand • establishing communications protocol between MFO and the vessel control room personnel (including Vessel Master) • prepared end of survey compliance and sighting reports.
Marine fauna observations	Bridge-watch crew	All bridge-watch crew must have completed an MFO awareness session facilitated by either the Dedicated MFO or by a trained CAPL HSE Specialist^. This awareness session includes: • cetacean observation requirements under the EPBC Regulations 2000 • additional marine fauna observation requirements as specified within this EP • sighting process and forms.

^ *Where the MFO awareness session is facilitated by a CAPL HSE Specialist, this person would also have previously completed an MFO training course previously.*

8.3 Focus areas and OE expectations

The OE expectations are organised into six focus areas (Figure 8-3). 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 8-3.

Figure 8-3: 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 8-3. Each of these focus areas and common expectations are described in further detail in the following subsections.

Table 8-3: Relevant focus areas and common expectations

Focus area or common expectation	Key processes
Focus area	
Workplace safety and health	• *Managing Safe Work (MSW): ABU Standardised OE Process* (Ref. 35) • *Chevron Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) • *ABU Hazardous Materials Management Procedure: ABU Standardised OE Procedure* (Ref. 37)
Process safety, reliability and integrity	• *OE Information Management: ABU Standardised OE Process* (Ref. 38) • *Management of Change for Facilities and Operations: ABU Standardised OE Process* (Ref. 39)
Environment	• *Environmental Stewardship: ABU Standardised OE Process* (Ref. 40) • *Quarantine Procedure Marine Vessels. ABU Standardised OE Process* (Ref. 41)
Stakeholders	• *Stakeholder Engagement and Issues Management: ABU Standardised OE Process* (Ref. 22)
Common expectation	
Risk management	• *ABU OE Risk Management Process* (Ref. 14)
Assurance	• *OE Assurance Corporate Process* (Ref. 42) • *OE Corporate Standard Incident Investigation* (Ref. 43) • *OE Data Reporting Standard (Ref. 44)*
Incident investigation and reporting	• *Incident Investigation and Reporting (II&R) Execution Manual* (Ref. 45)
Emergency management	• *Emergency Management OE Process* (Ref. 46) • OPEP (Ref. 2) • OSMP (Ref. 3)

8.3.1 Workforce safety and health

8.3.1.1 Managing safe work

The MSW 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, their delegates, contractors, and subcontractors. The MSW system (Ref. 35) is implemented to ensure safe work practices are made available to the workforce. Standards and procedures relating to MSW relevant to this EP include the PTW system. The PTW system, which includes simultaneous operations (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.

8.3.1.2 Marine

The *Marine Standard Non Tankers: Corporate OE Standard* (Ref. 36) 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 Marine 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 Marine 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.

8.3.1.3 Hazardous materials

CAPL's *Hazardous Materials Management Procedure* (Ref. 37) 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 8-4.

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 8-4: 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 DEMIRS, from Hinwood et al. (Ref. 47).
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

Assessment criteria	Selection rationale
	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.

8.3.2 Process safety, reliability and integrity

8.3.2.1 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 52 of the OPGGS(E)R.

The OE information management process (Ref. 38) 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.

Records relevant to installation activities may include:

- this EP
- induction material and attendance records
- assurance register
- inspection records and supporting evidence
- incident reports, if applicable
- routine environmental reporting
- emissions and discharge data
- relevant vessel certificates, plans and log book records.

8.3.2.2 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 1.1.1), the *Management of Change for Facilities and Operations* process (Ref. 39) 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.

For J-IC installation and pre-commissioning activities, the following would trigger an MoC:

- change to the activity scope (e.g. timing, method, etc.)

- a change to predicted operational subsea sound emissions from the SCSt that subsequently changes the infrastructure design, and associated impacts and risks, identified within this EP
- changes to knowledge of the receiving environment (e.g. EPBC listed species, Part 13 statutory instruments [i.e. recovery plans, threat abatement plans, conservation advice, wildlife conservation plans], requirements for AMPs, First Nations cultural heritage, etc.)
- new objections or claims received from relevant persons that are assessed to have merit
- non-conformances or opportunities for improvement which indicate that control measures may not be managing environmental impacts and risk to ALARP and acceptable levels
- incidents which identify new or increased impacts and risks arising from activities not previously identified in the accepted EP.

In accordance with regulation 38 and 39 of the OPGGS(E)R this EP must be resubmitted to NOPSEMA 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.

8.3.3 Environment

The Environment Focus Area provides CAPL's framework for the protection of the environment and community health using a risk-based approach that addresses potential environmental impacts.

8.3.3.1 Environmental Stewardship

The Environmental Stewardship process (Ref. 40) 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.

8.3.3.2 Quarantine

The *Quarantine Procedure Marine Vessels* (Ref. 41) 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.

All vessels operating in title areas must comply with applicable Australian biofouling and ballast water requirements to prevent the introduction and spread of marine pests. Regardless of the origin of the vessel or where it will be operating, all vessels must be free from marine pests when mobilised and the contractor must demonstrate the vessel meets low risk rating for biofouling.

As per the *Quarantine Procedure Marine Vessels* (Ref. 41), CAPL undertakes a risk assessment before any vessel is mobilised to title areas to confirm the vessel meets the requirements for approaching and accessing these areas. For this purpose, each vessel contractor submits a completed Marine Vessel Questionnaire with supporting evidence to CAPL for assessment.

This risk assessment will consider the vessel's attributes and history, including wetsides cleaning, application of antifoul coating, and recent transit history, including time in known high-risk waters.

If the vessel's history is unknown or if there is a moderate risk of IMP presence, additional actions must be undertaken. These action items (which may include requirements such as dry-dock, hull cleaning, etc.) will be issued to the contractor to implement. The contractor must also submit the vessel details to the Vessel Check online risk assessment tool (https://www.vessel-check.com/) and provide CAPL with a copy of the resulting Risk Assessment Report demonstrating the vessel has achieved low risk rating. Only once a vessel has met the requirements of the *Quarantine Procedure Marine Vessels* (Ref. 41), will CAPL issue a Vessel Mobilisation Certificate.

8.3.4 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. 22) 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.

8.3.4.1 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 8-5.

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, information on grants and social benefit investments (e.g. funding for ranger programs and training opportunities to support CAPL's activities), 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 CAPL's 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 8.3.2.2.

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 6.2.2) 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 8.3.2.2). Notifications to be made in the event of an emergency are detailed in Section 8.3.4.2.

Table 8-5: Notifications and ongoing consultation

Relevant person	Notification or ongoing consultation requirement	Timing	Frequency
Notifications			
AHO	Provide information to enable promulgation of Notice to Mariners Notify AHO via datacentre@hydro.gov.au	At least four weeks before commencing the petroleum activity, or as otherwise agreed with AHO	Once, prior to the petroleum activity commencing
AMSA	Provide information to enable promulgation of radionavigation warnings Notify AMSA's JRCC via rccaus@amsa.gov.au (phone: 1800 641 792 or +61 2 6230 6811)	At least 24 to 48 hours before commencing the petroleum activity, or as otherwise agreed with AMSA	Once, prior to the petroleum activity commencing
DoD	CAPL will provide a pre-start notification confirming the start date of the petroleum activity	At least five weeks before commencing activities, or as otherwise agreed with DoD	Once, prior to activities commencing
Relevant persons that have requested	CAPL will provide a pre-start notification confirming	At least two weeks before commencing the petroleum activity	Once, prior to the petroleum activity commencing

Relevant person	Notification or ongoing consultation requirement	Timing	Frequency
ongoing notifications including: • Recfishwest	the start date of the petroleum activity		
	CAPL will provide notification following completion of the petroleum activity	Within two weeks of completion of the petroleum activity	Once post petroleum activity completion
Potentially affected relevant persons and/or relevant persons that have requested emergency event notifications, including: • Coral Futures Corporation • Maxima Pearling Company • 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			
WAFIC	To inform of changes to activities or impacts/risks occurring that may affect fisheries. Notify WAFIC via oilandgas@wafic.org.au	Prior to new or significant changes to activities or impacts/risks occurring	As required
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 8.3.2.2, 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 8.3.4.3)	Ongoing	Ongoing
	Any new information on cultural values or features within the EMBA, and subsequent changes to activities or impacts/risks within the scope of the EP, will undergo an MoC	Ongoing	Ongoing

Relevant person	Notification or ongoing consultation requirement	Timing	Frequency
	evaluation as per Section 8.3.2.2.		
	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 8.3.2.2, 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 8.3.2.2, 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

8.3.4.2 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. 2).

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 8.3.4.1), 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 8.3.8), and consultation with required departments or agencies will occur as per regulatory requirements (e.g. refer to Table 8-13 for incident reporting requirements).

CAPL will also notify any relevant persons (as identified in Table 6-4, and any additional relevant persons identified under Section 8.3.4.1) that requested to be

notified in the event of an oil spill or in the event of any other emergency event (Table 8-5).

8.3.4.3 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, including Sea Country values.

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 8-6 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 8-7.

Table 8-6: Summary of objectives, scope, and responsibilities in engagement plans and/or consultation protocols

Objectives	Scope	Responsibilities
• Provide governance and strategic oversight to guide collaboration and communications • Sets out general terms for allocation of resources and recovery of reasonable costs • Establish a framework for ongoing consultation • Outlines 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 8-7: First Nations representative bodies ongoing consultation and relationship building

First Nations representative body	Ongoing Consultation	Relationship Building
Baiyungu Aboriginal Corporation (BAC)	• BAC has requested that ongoing consultation be completed through the PBC, NTGAC • CAPL will keep BAC informed on the timing and status of its activities • CAPL will notify BAC in the event that a reportable incident occurs	• CAPL provided opportunity to participate in Chevron Community Spirit Grant program and is now providing funding support for a community cultural event at in 2024 • CAPL invited BAC participants to attend the Roebuck Challenge Oil Spill Response Training in Broome (October 2023)
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	• CAPL has executed a cost recovery agreement with BTAC for ongoing consultation • CAPL and BTAC have finalised a Funding Agreement which will be formally endorsed at the April BTAC board meeting, which CAPL will attend • CAPL and BTAC will hold a one-day common law holder consultation meeting in mid-May 2024	• CAPL has provided an Engagement Plan to BTAC which provides cost recovery for informal meetings with BTAC including on country meetings and events • CAPL invited BTAC participants to attend the Roebuck Challenge Oil Spill Response Training in Broome (October 2023) • 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 and BTAC have commenced implementing the agreed engagement plan • CAPL and BTAC have commenced scoping a cultural mapping program in March 2024 and are working towards developing a Relationship Agreement
Mardathoonera Cultural Heritage Pty Ltd (MCH)	• CAPL has provided a negotiation protocol • CAPL has provided a consultation meeting protocol • CAPL working with MCH to forecast consultation requirements and schedule for 2024	• 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)

First Nations representative body	Ongoing Consultation	Relationship Building
Murujuga Aboriginal Corporation (MAC)	• MAC has advised CAPL to consult with the relevant PBCs • CAPL will keep MAC informed on the timing and status of its activities • CAPL will notify MAC in the event that a reportable incident occurs • CAPL working with MAC to forecast consultation requirements and schedule for 2024	• CAPL invited MAC 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
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 for 2024	• 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
Ngarluma Aboriginal Corporation (NAC)	• CAPL and NAC have executed a consultation meeting protocol which provides cost recovery and agreed meeting schedule • CAPL working with NAC to co-design ongoing consultation • CAPL working with NAC to forecast consultation requirements and schedule for 2024	• CAPL invited NFYL 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
Ngarluma Yindjibarndi Foundation Ltd (NYFL)	• CAPL has provided an Engagement Plan to NFYL which provides cost recovery for informal meetings with NYFL including on country meetings and events • CAPL working with NYFL to co-design ongoing consultation • CAPL working with NYFL to forecast consultation requirements and schedule for 2024	• CAPL invited NYFL 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 and have provided financial support for a social benefits program in Roebourne
Robe River Kuruma Aboriginal Corporation (RRKAC)	• RRKAC has requested that we inform them of activities occurring within 2km of the mouth of the Fortescue River and to inform them of future activities for consideration by their Heritage and Culture Committee	• CAPL invited WAC participants to attend the Roebuck Challenge Oil Spill Response Training in Broome (October 2023)

First Nations representative body	Ongoing Consultation	Relationship Building
	• CAPL working with RRKAC to forecast consultation requirements and schedule for 2024	• CAPL has provided funding support to RRKAC through its community spirit grant program to invest in its ranger program
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 for 2024	• 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. • CAPL has provided WAC funding support to employ a Ranger Coordinator • 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
Yinggarda Aboriginal Corporation (YAC)	• CAPL has provided YAC with a consultation meeting protocol which provides cost recovery and agreed meeting schedule • CAPL is working with YAC to co-design ongoing consultation and forecast consultation requirements for 2024	• CAPL has discussed ongoing engagement plan with YAC and opportunities to assist the corporation in the achievements of its strategic plan • CAPL invited YAC 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

8.3.5 Risk management

The risk management process (Ref. 14) 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. 34) and ISO 31000:2018 *Risk management – Principles and guidelines* (Ref. 15).

This risk management process is summarised in Section 5 of this EP. Additional risk assessments must be undertaken if the MoC process (Section 8.3.2.2) is triggered. Risk assessments are undertaken in accordance with this process.

The *ABU OE Risk Management Process* (Ref. 14) and the *Management of Change for Facilities and Operations* process (Ref. 39) are the key systems CAPL use to ensure, that in accordance with regulation 22(2)(a) of the OPGGS(E)R, the impacts and risks of the petroleum activity continue to be identified and reduced to ALARP.

8.3.6 Assurance

Within the OEMS, assurance is a common expectation that supports the OE objective of each focus area. The *ABU OE Assurance Process* (Ref. 42) enables CAPL to deliver assurance that safeguards are established and functioning; it details:

- a framework for managing verification activities that assure that CAPL complies with applicable legal and OEMS requirements
- a process to identify, report and resolve noncompliance
- the minimum qualifications and organisational capability to execute this process.

The *ABU OE Assurance Plan* (Ref. 48) documents the CAPL ABU integrated assurance system and associated assurance activities (Figure 8-4). 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 project and asset assurance plans that outline asset specific assurance activities and risk-based frequency (i.e. field inspection programs, audits, compliance reviews, performance reviews).

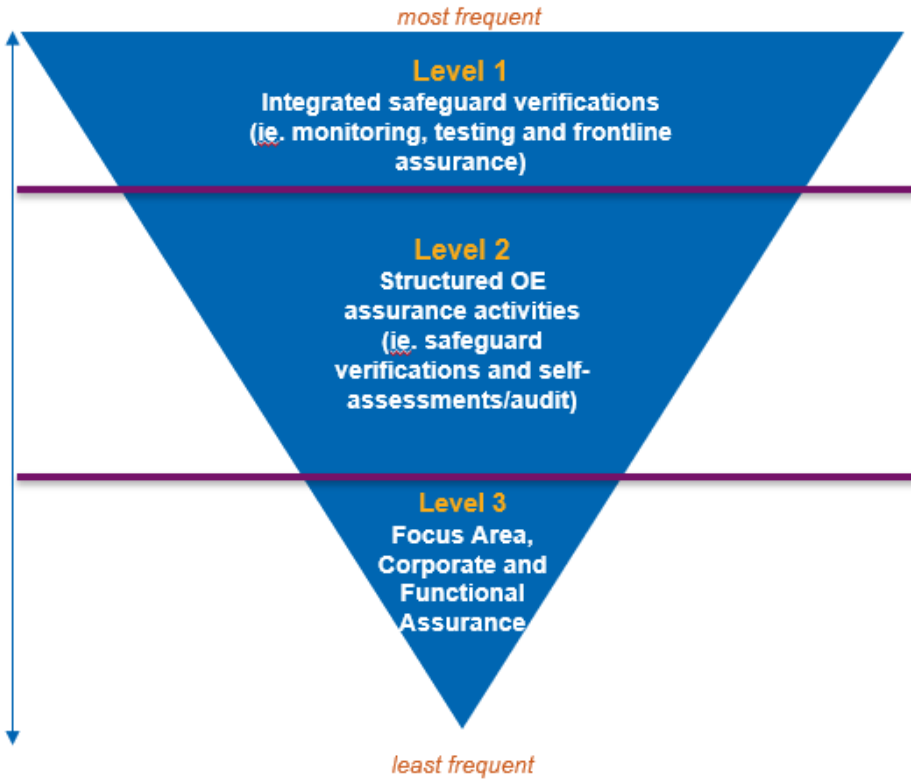


Figure 8-4: ABU integrated assurance system

To support the implementation of the *ABU OE Assurance Process*, CAPL have developed an ABU integrated assurance system (Figure 8-4), 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:

- **Level 1 – Monitoring, testing and frontline assurance assurance**: ongoing, routine, planned verifications of safeguards specific for the asset/facility (e.g. inspections, preventive maintenance, emergency drills and exercises,)
- **Level 2 – OE assurance**: OE assurance activities (e.g. assessments, reviews, audits, inspections) that verify safeguards are in place and functioning, and validate that L1 assurance is effective. These assurance activities monitor weaknesses in the management system and compliance with regulatory requirements, and input learnings into the management system cycle.
- **Level 3 – Corporate and functional assurance:** Assurance activities undertaken by Chevron, CAPL's functional groups (e.g., HSE, Drilling and Completions, base business) or third parties. These assurance activities test effectiveness of the focus area's complete assurance system and how associated safeguards are being sustained.

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 outcomes 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.

As outlined in Section 8.3.1.2, prior to the activity commencing, a pre-survey vessel inspection will be undertaken to confirm that vessel management systems are consistent with the requirements in this EP.

Prior to the commencement of the petroleum activity, an assurance register specific to the requirements of this EP will be developed. Assurance activities will be undertaken in accordance with the *ABU OE Assurance Process* (Ref. 42). Any potential non-conformances or opportunities for improvement will be identified, and corrective actions associated with these will be implemented as soon as practicable. Corrective actions will be delegated to the person deemed most appropriate to fulfil the action. Records of inspections will be maintained in accordance with Section 8.3.1.2.

Environmental performance standards in the EP undergo an annual compliance review and evidence will be gathered for each environmental performance standard to support the annual environmental report. Environmental performance during the petroleum activity will be reviewed to ensure that environmental performance standards and environmental performance outcomes are being met, reviewed and where necessary amended to continue to manage the environmental impacts and risks of the petroleum activity to ALARP and acceptable levels.

Assurance related to the activities described in this EP will be summarised in the annual report submitted to NOPSEMA (Section 8.4.3).

8.3.6.1 Managing Instances of Nonconformance

The reporting, investigation, and tracking of non-conformances are managed via Chevron's *OE Corporate Standard Incident Investigation* (Ref. 43) and *OE Data Reporting Standard* (*Ref. 44*). These processes apply to instances where the requirements of this EP have not been met. This process is used if inspections, reviews and audits identify that activities in the scope of this EP are not being implemented in accordance with the risk and impact control measures identified in Section 7.

Audit findings and corrective actions are recorded and tracked in a CAPL compliance assurance database for timely closure of actions. As per Section 8.3.6, any corrective action/s identified during inspections is required to be implemented as soon as practicable during the petroleum activity. Audit findings that identify a breach of an environmental performance outcome or environmental performance standard will be reported in accordance with Section 8.4.2.

Any suggested changes to activities or control measures arising from audit findings or instances of noncompliance will be subject to a MoC process in accordance with Section 8.3.2.2.

8.3.7 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. 45) 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 8.4.2.

8.3.8 Emergency management

CAPL's emergency management implementation strategy is described in the following sub-sections.

In addition to CAPL's overarching emergency management strategies, and with specific reference to vessel-based activities, an approved SOPEP will also be in place (in accordance with vessel class requirements) as required by MARPOL 73/78 Annex I and Marine Order 91—Marine pollution prevention—oil. In the event of a vessel-based spill event the SOPEP will be implemented by the Vessel Master. Control measures and environmental performance standards relating to SOPEPs are described in Sections 7.14 and 7.15, and requirements have not been duplicated here.

8.3.8.1 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. 49) and is consistent with the

core aspects presented in the International Maritime Organisation (IMO) equivalent courses.

The ERO comprises the groups listed in Table 8-8; this table also describes the major functions of teams during an emergency.

Figure 8-5 to Figure 8-7 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. 50).

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. 2).

Table 8-8: 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.

Team	Description
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.
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 respon363ecognizes363363ion, 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.

8.3.8.2 Emergency management process

The *Emergency Management OE Process* (Ref. 46) 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. 46) 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)
- emergency response plans 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 emergency response plans
- 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. 51).

The OPEP (Ref. 2) 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.

8.3.8.3 Chain of command (emergency response)

A well-delineated EMT chain of command has been established for emergency response (Figure 8-5 to Figure 8-7). 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.

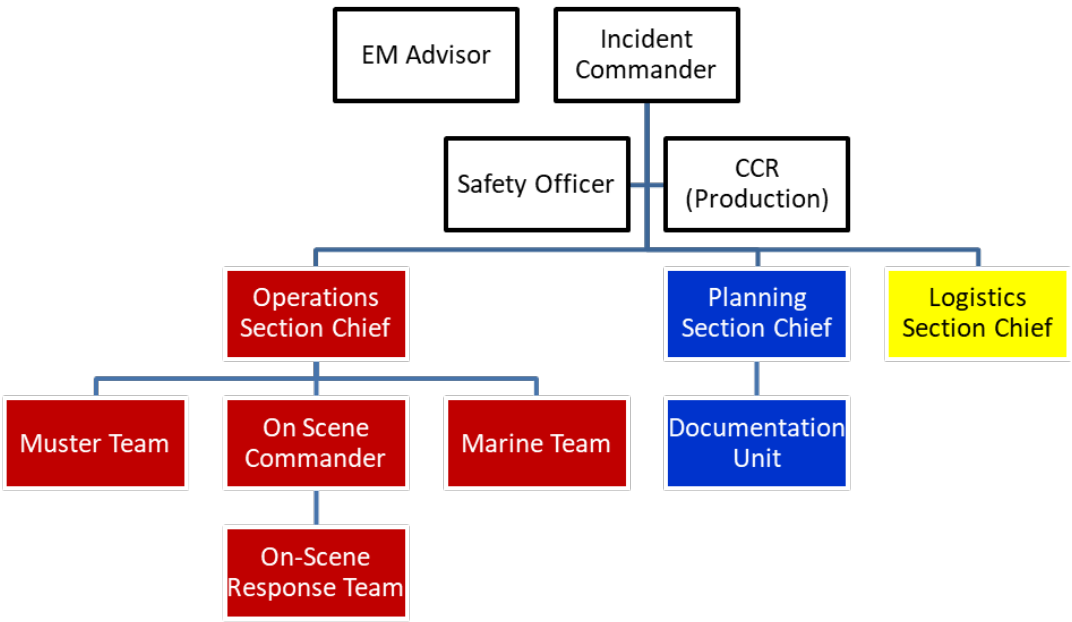


Figure 8-5: Basic installation EMT organisation chart

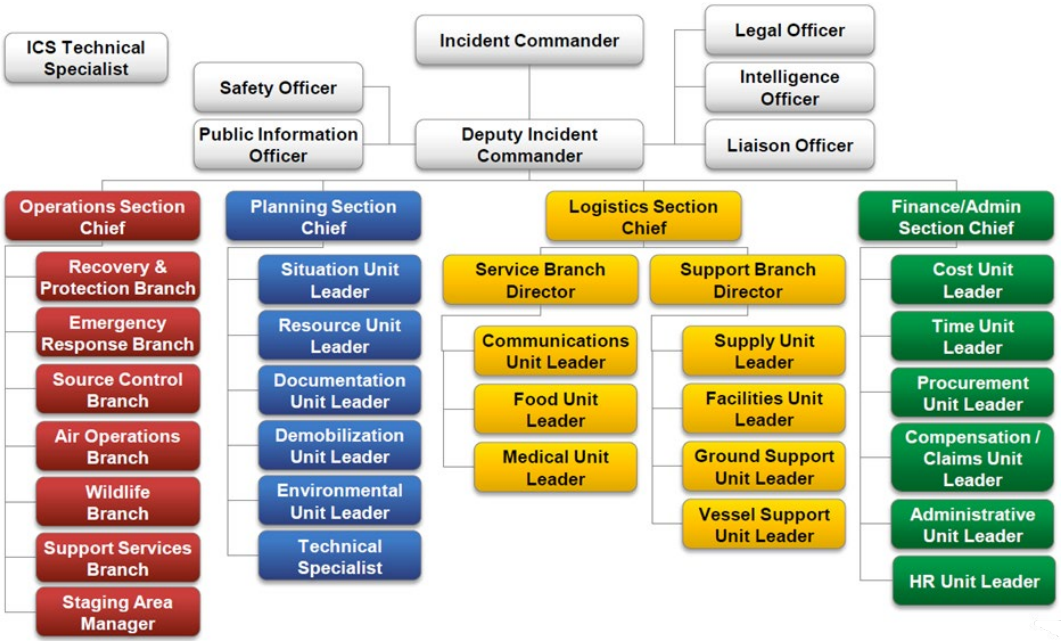


Figure 8-6: Expanded EMT organisation chart

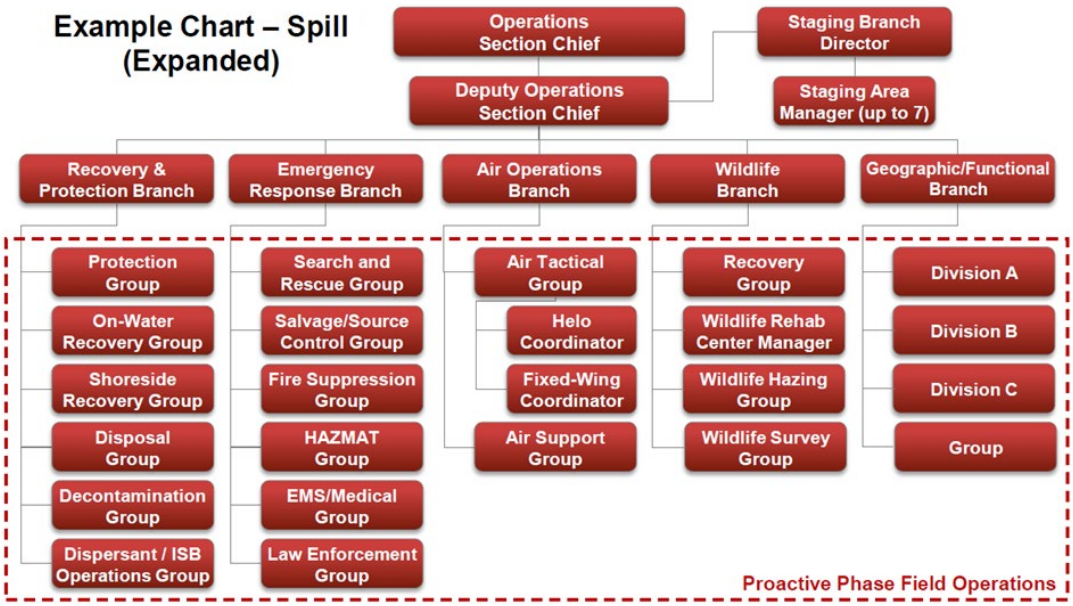


Figure 8-7: Example expanded operations section organisation chart

8.3.8.4 Roles and responsibilities (emergency response)

Table 8-9 provides additional information about the structure of these teams and the key individual roles and responsibilities during emergency response.

Table 8-9: Key roles and responsibilities—emergency response

Role	Responsibilities
On-Site Response Team	
On-Scene Commander (OC) *(Vessel Master)*	• Safely and effectively recognizeses and manages the ORT response operations

Role	Responsibilities
	• 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
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

8.3.8.5 Training and competency (emergency response)

Competencies and training requirements for the EMT, ORT, and other personnel during implementation of the OPEP (Ref. 2) are outlined in Table 8-10. Competency and training records for personnel, including contractors and subcontractors, are maintained.

Table 8-10: Competency and training requirements—emergency response

Role	Summary	Training Standard
Note: Personnel with no specialist emergency response duties should undergo training in line with their responsibilities as indicated below for 'All personnel'.		
All personnel	• Provide basic first response to an incident, including, but not limited to: conducting a quick assessment; making safe; notifying anyone else in danger; and raising the alarm • Complete basic procedures in response to an alarm and evacuate to a muster point (as necessary) • Frequency: every 3 years if not involved in response or drills/exercises	
In addition to the above, personnel responsible for roles with specialist oil spill response duties should undergo further training and practice in line with the responsibilities set out below. Training		

Role	Summary	Training Standard
is provided to maintain the capability to respond to all hazards in line with the Incident Command System implemented by CAPL.		
Emergency Management Teams (EMTs)		
PEMT Incident Commander	• Selected Perth based personnel, would typically with a manager or senior manager role within CAPL • Competencies: overall management of emergency response operations and ensure operations are performed safely, effectively, and efficiently. Commands the EMT • Frequency: once a year (maintenance of competencies may be through response or training/drills/exercises)	• ICS-100 Introduction to the Incident Command System • ICS-200 Basic Incident Command System training • ICS-220 Initial Response Team • ICS-300 Intermediate Incident Command System Training (PEMT members only) • Oil Spill Awareness Training
PEMT Command and General Staff	• Selected Perth based personnel, typically a manager, or personnel with skills and knowledge appropriate to the function • Competencies: provides strategic direction, internal planning, logistics, and operational support. Operates from the emergency command centre and supports the IC who is responsible for the overall control of the incident • Frequency: once a year (maintenance of competencies may be through response or training/drills/exercises)	• ICS-100 Introduction to the Incident Command System • ICS-200 Basic Incident Command System training • ICS-220 Initial Response Team • ICS-300 Intermediate Incident Command System Training (PEMT members only) • Oil Spill Awareness Training

8.3.8.6 Oil spill exercise schedule

The CAPL *Oil Spill Response Multi-Year Exercise and Drill Schedule* (Ref. 52) 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 multi-year exercise schedule (Ref. 52) outlines the proposed testing arrangements to be completed, including the exercise types (Table 8-11) and proposed level of response to be tested (Table 8-12) that may be used to meet the defined objectives. A minimum of one test for each level will be conducted each year.

Table 8-11: 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 8-12: 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

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. 2) 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

8.4 Environmental monitoring and reporting

8.4.1 Environmental monitoring

Regulation 22(6) of OPGGS(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 contractors will monitor and record emissions and discharges as detailed in Section 7 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. 3), which is identified as a control measure in Section 7.15, 7.16, and 7.17. 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.

8.4.1.1 Marine fauna sighting records

A cetacean sighting report, based on the marine fauna observations undertaken from vessels (as detailed in Section 7), will be prepared consistent with the preferred approach as described in NOPSEMA's *Recording and reporting MMO data* environmental bulletin (Ref. 320).

8.4.2 Incident reporting

Environmental incidents will be reported by CAPL in accordance with Table 8-13.

Table 8-13: Incident reporting

Recordable Incident reporting – Regulation 50	
Legislative definition of 'recordable incident': *'Recordable incident, for an activity, means a breach of an environmental performance outcome 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	Submit written report to NOPSEMA by the 15th of each month

• 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.	

Reportable Incident reporting – Regulations 47, 48, and 49

Legislative definition of 'reportable incident':

'*Reportable incident, for an activity means an incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage*.'

Therefore, in alignment with Chevron Corporation's Integrated Risk Prioritization Matrix (Table 5-1), 'reportable incidents' under this EP include those events (not planned activities) that have been risk assessed within Section 7 as having a consequence level between Moderate (4) and Catastrophic (1). In accordance with this definition, the reportable incidents with the potential to cause moderate to significant environmental damage identified under this EP are:

- introduction of an IMP (Section 7.8)
- unplanned release from a vessel collision event (Section 7.15).

Incident reporting is assessed on a case-by-case basis to determine if they trigger a reportable incident as defined by the OPGGS(E)R and this EP. Other incidents that may be considered reportable incidents include:

- loss of equipment resulting in damage or harm to the environment
- death or injury to individual(s) from an EPBC Act Listed Species
- an unplanned event within a Commonwealth Marine Park.

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
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

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 Commonwealth 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.	Report verbally to the DNP (24-hour) Marine Duty Officer as soon as practicable, and also provide a follow-up email. Phone: 0419 293 465 Email: marine.compliance@environment.gov.au
Death or injury to individual(s) from an EPBC Act Listed Species as a result of the petroleum activity	Report injury to or mortality of EPBC Act Listed Threatened or Migratory species within seven business days of observation to DCCEEW 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. petroleum.environment@dmirs.wa.gov.au
	Report verbally to the DoT MEER Duty Officer within two hours, and also provide a follow-up email with a POLREP attached. Phone: 08 948 9924

8.4.3 Routine environmental reporting

Regulation 51 of the OPGGS(E)R requires environmental performance reporting for the activity described in this EP, as summarised in Table 8-14. Routine notifications required by regulation 54 of the OPGGS(E)R, and additional notifications as required by other legislation or guidelines, and also included in Table 8-14.

Table 8-14: Routine external reporting requirements

Reporting requirement	Description	Reporting to	Timing
Environmental performance reporting – Regulation 51			
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 from commencement of activities
Notification of start and end of activity – Regulation 54			
Notification of start of activity	CAPL must complete Form FM1405 and submit to NOPSEMA at least 10 days before activity commencement	NOPSEMA submissions@nopsema.gov.au or: https://securefile.nopsema.gov.au/filedrop/submissions	Once prior to activity commencement
Notification of conclusion of activity	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
Additional notification requirements			
Notification of start of activity	CAPL will provide DEMIRS a pre-start notification confirming the start date of the proposed activity	DEMIRS: Petroleum.environment@dmirs.wa.gov.au	Notification of start of activity
Notification of start of activity	CAPL must notify DNP at least 10 days before commencement of the activity within an AMP. The notification should include: • titleholder details • contact details for a titleholder representative • details of the OA and overlap with an AMP • name and IMO vessel number of vessel/s entering an AMP • type and duration of activity • link to activity summary on NOPSEMA website.	DNP: marineparks@environment.gov.au	Once prior to activity commencement within an AMP
Notification of conclusion of activity	CAPL must notify DEMIRS following completion of the activity	DEMIRS: Petroleum.environment@dmirs.wa.gov.au	Notification of conclusion of activity
Notification of conclusion of activity	CAPL must notify DNP following completion of the activity within an AMP.	DNP: marineparks@environment.gov.au	Once post to activity completion within an AMP

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

8.5 Environment Plan review

If required, any revisions and/or resubmission of this EP to NOPSEMA, in accordance with regulation 39 of the OPGGS(E)R, will be undertaken in accordance with the OEMS, and particularly the MoC process (Section 8.3.2.2).

9 abbreviations and definitions

Table 9-1: Abbreviations and definitions

Acronym/ Abbreviation	Definition
ABU	Australian Business Units
AFMA	Australian Fisheries Management Authority
AHO	Australian Hydrographic Office
AIIMS	Australasian Inter-service Incident Management System
AIS	Automated Identification System
ALARP	As Low As Reasonably Practicable
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANZG	Australian and New Zealand Guideline
API	American Petroleum Institute
ASC	Australia Singapore Cable
ASOG	Activity-specific operational guideline
ASV	Accommodation support vessel
AUV	Autonomous underwater vehicle
Auscoast	Australian Coastal (weather warning)
BAC	Baiyungu Aboriginal Corporation
BIA	Biologically Important Area
BIAWA	Boating Industry Association Western Australia
BFFL	Barrier fluid flying lead
BP	Boiling Point
BRS	Bureau of Resource Sciences
BTAC	Buurabalayji Thalanyji Aboriginal Corporation
BTEX	Benzene, toluene, ethylbenzene and xylenes
CALM Act	*Conservation and Land Management Act 1984* (WA)
CAPL	Chevron Australia Pty Ltd
CAR	Containment and Recovery
CDU	Central Distribution Unit
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CIM	Compressor interface module
CHARM	Chemical Hazard Assessment and Risk Management
CLV	Cable lay vessel
CMT	Crisis Management Teams
COLREGS	Convention on the International Regulations for Preventing Collisions at Sea, 1972
cP	Centipoise
CPDU	Control power distribution units

Acronym/ Abbreviation	Definition
Cth	Commonwealth
dB re 1 µPa	Decibels relative to one micropascal; the unit used to measure the intensity of an underwater sound
DBCA	Western Australia Department of Biodiversity, Conservation and Attractions
DCCEEW	Commonwealth Department of Agriculture, Climate Change, Energy, the Environment and Water
DEMIRS	Western Australian Department of Energy, Mines, Industry Regulation and Safety (previously DMIRS)
DIFFS	Deck integrated fire fighting system
DJSC	Darwin-Jakarta-Singapore Cable
DMIRS	Western Australian Department of Mines, Industry Regulation and Safety
DNP	Commonwealth Director of National Parks
DoT	Western Australian Department of Transport
DP	Dynamic Positioning
DPLH	Western Australian Department of Planning, Lands and Heritage
DPIRD	Western Australian Department of Primary Industries and Regional Development (formerly Department of Fisheries)
EFL	Electrical Flying Lead
EMBA	Environment that May Be Affected
EMF	Electromagnetic field
EMT	Emergency Management Team
ENGO	Environmental non-governmental organisations
EOFL	End of facility life
EOP	Emergence Operating Procedures
EP	Environment Plan
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
$ER_{95\%}$	95th percentile exposure ranges
ERO	Emergency Response Organisation
ESD	Ecologically Sustainable Development
FCS	Field control station
GFP	Gorgon Foundation Project
GHG	Greenhouse gas
GS2	Gorgon Stage 2
GTP	Gas Treatment Plant
h	Hour
HFL	Hydraulic Flying Lead
HFO	Heavy Fuel Oil
HIRA	Hazard Identification and Risk Assessment

Acronym/ Abbreviation	Definition
HSE	Health, Safety, and environment
HWM	High water mark
HV	High voltage
HVSC	High voltage submarine cable
Hz	Hertz
IAPP	International Air Pollution Prevention
IC	Incident Commander
IEE	International Energy Efficiency
IEMT	Installation Emergency Management Team
IFO	Intermediate Fuel Oil
IMO	International Maritime Organization
IMP	Invasive Marine Pest
IMR	Inspection, Maintenance, and Repair
IMS	Incident management system
IPCC	Intergovernmental Panel on Climate Change
IIR	Incident investigation and reporting
ISPP	International Sewage Pollution Prevention
ISQG	Interim Sediment Quality Guideline
ITOPF	International Tanker Owners Pollution Federation Ltd
IUCN	International Union for Conservation of Nature
J-IC	Jansz–Io Compression
JASMINE	JASCO Animal Simulation Model Including Noise Exposure
JRCC	Joint Rescue Coordination Centre
KEF	Key Ecological Feature
kg	Kilogram
kHz	Kilohertz
km	Kilometre
L	Litre
LAT	Lowest astronomical tide
LBL	Long baseline
LCV	Light construction vessel
LGM	Last glacial maximum
LNG	Liquified Natural Gas
LOC	Loss of Containment
LoR	Limit of reporting
lux	A standard for measuring light; equal to the amount of visible light per square metre incident upon a surface
LV	Low voltage

Acronym/ Abbreviation	Definition
LWM	Low water mark
m	Metre
m/m	Mass percent
m^2	Square metre
m^3	Cubic metre
MAC	Murujuga Aboriginal Corporation
MAOP	Maximum allowable operating pressure
MARPOL	The International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
MARS	Maritime Arrivals Reporting System
MBES	Multibeam Echo Sounder
MDO	Marine Diesel Oil
MEG	Monoethylene glycol
MES	Monitoring, Evaluation, and Surveillance
MFO	Marine Fauna Observer
MIE	Major incident or event
mg	Milligram
MGO	Marine gas oil
mm	Millimetre
MNES	Matter of national environmental significance
MOC	Management of Change
MoU	Memorandum of Understanding
MPTS	Mid-line Pipeline Termination Structure
MSC	Management system cycle
MSF	Module support frame
MSW	Managing Safe Work
MV	Medium voltage
N/A	Not Applicable
NAC	Ngarluma Aboriginal Corporation
NEBA	Net Environmental Benefit Analysis
NEPM	National Environmental Protection (Air Quality) Measure
nm	Nautical Mile
NMFS	National Marine Fisheries Service (US)
NOAA	National Oceanic and Atmospheric Administration
NO_2	Nitrogen dioxide
NOPSEMA	National Offshore Petroleum Safety and Environment Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NTGAC	Nganhurra Thanardi Garrbu Aboriginal Corporation

Acronym/ Abbreviation	Definition
NTRB	Native Title Representative Body
NO_x	Oxides of nitrogen
NWMR	North-west Marine Region
NWS	North West Shelf
NYFL	Ngarluma Yindjibarndi Foundation Ltd
OA	Operational Area
OC	On-scene Commander
OCNS	Offshore Chemical Notification Scheme
OCV	Offshore construction vessel
OE	Operational Excellence
OEMS	Operational Excellence Management System
OEUK	Offshore Energies UK
OFL	Optical flying leads
OPEP	Oil Pollution Emergency Plan
OPGGS Act	Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006*
OPGGS(E)R	Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
ORT	On-site Response Team
OSMP	Operational and Scientific Monitoring Plan
OWR	Oiled Wildlife Response
OVIS	Offshore Vessel Information System
PAH	Polyaromatic Hydrocarbon
PAR	Pre-arrival reporting
PCB	Prescribed Body Coporporate
PEMT	Perth Emergency Management Team
PFL	Power flying lead
ppb	Parts per billion
ppm	Parts per million
PPP	Protection Prioritisation Process
PTS	Permanent threshold shift
PTW	Permit to work
RAAF	Royal Australian Air Force
RNTBC	Registered Native Title Body Corporate
RRK	Robe River Kuruma
RRKAC	Robe River Kuruma Aboriginal Corporation
RMS	Root Mean Square
ROV	Remotely Operated Vehicle
s	Second (time)

Acronym/ Abbreviation	Definition
SCMS	Subsea compression manifold station
SCSt	Subsea compression station
SCU	Subsea compressor unit
SEEMP	Ship Energy Efficiency Management Plan
SEL	Sound exposure levels
SHC	Shoreline Clean-up
SIMAP	Spill Impact Mapping and Analysis Program
SIMOPS	Simultaneous Operations
SPU	Subsea pump unit
SOLAS	International Convention for the Safety of Life at Sea, 1974
SOPEP	Shipboard Oil Pollution Emergency Plan
SO_x	Sulfur oxides
SPD	Shoreline Protection and Deflection
SPL	Sound Pressure Level
SSS	Side-scan Sonar
STCW95	Standards of Training Certification and Watch Keeping for Seafarers
TBT	Tributyltin tin
TEC	Threatened Ecological Community
TRG	Tactical Response Guide
TRH	Total recoverable hydrocarbon
TPH	Total petroleum hydrocarbon
TTS	Temporary threshold shift
UK	United Kingdom
US	United States
UTA	Umbilical termination assembly
WA	Western Australia
WAC	Wirrawandi Aboriginal Corporation
WAFIC	Western Australian Fisheries Industry Council
WTW	Walk-to-work
YAC	Yinggarda Aboriginal Corporation
YMAC	Yamatji Marlpa Aboriginal Corporation

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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 protected matters search reports

Australian Government
Department of Climate Change, Energy, the Environment and Water

OPERATIONAL AREA

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: 13-Jul-2023

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	24
Listed Migratory Species:	41

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:	67
Whales and Other Cetaceans:	29
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:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	28
Key Ecological Features (Marine):	3
Biologically Important Areas:	20
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
EEZ and Territorial Sea

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
FISH		
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Congregation or aggregation known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
SHARK		

Scientific Name	Threatened Category	Presence Text
Carcharias taurus (west coast population)		
Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known 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]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
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
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
Sterna dougallii		
Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata		
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera 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

Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Congregation or aggregation known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Dugong dugon		
Dugong [28]		Species or species habitat known to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
Isurus oxyrinchus		
Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus		
Longfin Mako [82947]		Species or species habitat likely to occur within area
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	Congregation or aggregation known to occur within area
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus		
Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis		
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Anous stolidus		
Common Noddy [825]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
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
Macronectes giganteus		
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus		
White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon lepturus fulvus		
Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Sterna dougallii		
Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
Thalasseus bengalensis as Sterna bengalensis		
Lesser Crested Tern [66546]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		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
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

Scientific Name	Threatened Category	Presence Text
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
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		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Congregation or aggregation known to occur within area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Disteira major		
Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus		
Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi		
North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
Hydrophis elegans		
Elegant Seasnake [1104]		Species or species habitat may occur within area
Leioselasma czeblukovi as Hydrophis czeblukovi		
Fine-spined Seasnake, Geometrical Seasnake [87374]		Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
Pelamis platurus		
Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata		
Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis		
Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata		
Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus		
Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus		
Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps		
Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima		
Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei		
Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Megaptera novaeangliae		
Humpback Whale [38]		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]		Species or species habitat may occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra		
Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus		
Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens		
False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahulensis		
Australian Humpback Dolphin [87942]		Species or species habitat may occur within area
Stenella attenuata		
Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba		
Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris		
Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis		
Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus		
Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat likely to occur within area
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

Scientific Name	Behaviour	Presence
Aug - Sep		
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
Chelonia mydas		
Green Turtle [1765]	Nesting	Known to occur
Nov - May		
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Nesting	Known to occur

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Barrow Island	Marine Management Area	WA

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Gorgon Gas Development	2003/1294		Assessment
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
Develop Jansz-Io deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-	2005/2184	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
Not controlled action			
Bollinger 2D Seismic Survey 200km North of North West Cape WA	2004/1868	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
Development of Halyard Field off the west coast of WA	2010/5611	Not Controlled Action	Completed
Jansz-2 and 3 Appraisal Wells	2002/754	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Not controlled action (particular manner)			
"Leanne" offshore 3D seismic exploration, WA-356-P	2005/1938	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 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
CGGVERITAS 2010 2D Seismic Survey	2010/5714	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	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
Harmony 3D Marine Seismic Survey	2012/6699	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
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	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R	2006/2609	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5715	Not Controlled Action (Particular Manner)	Post-Approval
West Anchor 3D Marine Seismic Survey	2008/4507	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Key Ecological Features [Resource Information]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Ancient coastline at 125 m depth contour	North-west
Continental Slope Demersal Fish Communities	North-west
Exmouth Plateau	North-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Internesting buffer	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
Eretmochelys imbricata Hawksbill Turtle [1766]	Foraging	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
Natator depressus Flatback Turtle [59257]	Foraging	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 pacifica Wedge-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
Whales		

Scientific Name	Behaviour	Presence
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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SOUND EMBA

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: 13-Jul-2023

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	38
Listed Migratory Species:	50

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:	83
Whales and Other Cetaceans:	29
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:	3
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	34
Key Ecological Features (Marine):	3
Biologically Important Areas:	23
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
EEZ and Territorial Sea

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically 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
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 may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
FISH		
Milyeringa veritas Cape Range Cave Gudgeon, Blind Gudgeon [66676]	Vulnerable	Species or species habitat may occur within area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Bettongia lesueur Barrow and Boodie Islands subspecies Boodie, Burrowing Bettong (Barrow and Boodie Islands) [88021]	Vulnerable	Breeding 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
Macroderma gigas		
Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Osphranter robustus isabellinus		
Barrow Island Wallaroo, Barrow Island Euro [89262]	Vulnerable	Species or species habitat likely to occur within area
Petrogale lateralis lateralis		
Black-flanked Rock-wallaby, Mororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat known to occur within area
Rhinonicteris aurantia (Pilbara form)		
Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat may occur within area
REPTILE		
Aipysurus apraefrontalis		
Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
Aipysurus foliosquama		
Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour 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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Breeding 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 known 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]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
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
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
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
Sterna dougallii Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
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
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

Scientific Name	Threatened Category	Presence Text
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]		Species or species habitat likely to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus		
Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis		
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Glareola maldivarum		
Oriental Pratincole [840]		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 may occur within area
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat likely to occur within area
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas		
Streaked Shearwater [1077]		Species or species habitat likely to occur within area
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
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Glareola maldivarum		
Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area overfly marine area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 may occur within area
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area
Phaethon lepturus		
White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon lepturus fulvus		
Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Rostratula australis as Rostratula benghalensis (sensu lato)		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Sterna dougallii		
Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Sternula albifrons as Sterna albifrons		
Little Tern [82849]		Species or species habitat may occur within area
Thalasseus bengalensis as Sterna bengalensis		
Lesser Crested Tern [66546]		Breeding known to occur within 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
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

Scientific Name	Threatened Category	Presence Text
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
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
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
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

Scientific Name	Threatened Category	Presence Text
Solenostomus cyanopterus		
Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus		
Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus		
Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris		
Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
Dugong dugon		
Dugong [28]		Species or species habitat known to occur within area
Reptile		
Acalyptophis peronii		
Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis		
Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
Aipysurus duboisii		
Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii		
Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus foliosquama		
Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus laevis		
Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii		
Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Chitulia ornata as Hydrophis ornatus		
Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Disteira kingii		
Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major		
Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus		
Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi		
North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Hydrophis elegans		
Elegant Seasnake [1104]		Species or species habitat may occur within area
Leioselasma czeblukovi as Hydrophis czeblukovi		
Fine-spined Seasnake, Geometrical Seasnake [87374]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Pelamis platurus		
Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata		
Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis		
Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata		
Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus		
Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus		
Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps		
Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima		
Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei		
Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae		
Humpback Whale [38]		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]		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

Current Scientific Name	Status	Type of Presence
Sousa sahulensis		
Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area
Stenella attenuata		
Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba		
Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris		
Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis		
Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus		
Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat likely to occur within area
Tursiops truncatus s. str.		
Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris		
Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories
Montebello	Multiple Use Zone (IUCN VI)

Habitat Critical to the Survival of Marine Turtles

Scientific Name	Behaviour	Presence
Aug - Sep		
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
Chelonia mydas		
Green Turtle [1765]	Nesting	Known to occur
Nov - May		
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Nesting	Known to occur

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Barrow Island	Nature Reserve	WA
Barrow Island	Marine Management Area	WA
Barrow Island	Marine Park	WA

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Gorgon Gas Development	2003/1294		Assessment
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
Develop Jansz-lo deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-	2005/2184	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

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Pluto Gas Project	2005/2258	Controlled Action	Completed
Pluto Gas Project Including Site B	2006/2968	Controlled Action	Post-Approval
Not controlled action			
Bollinger 2D Seismic Survey 200km North of North West Cape WA	2004/1868	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
Development of Halyard Field off the west coast of WA	2010/5611	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Jansz-2 and 3 Appraisal Wells	2002/754	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Wheatstone 3D seismic survey, 70km north of Barrow Island	2004/1761	Not Controlled Action	Completed
Not controlled action (particular manner)			
"Leanne" offshore 3D seismic exploration, WA-356-P	2005/1938	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 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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
CGGVERITAS 2010 2D Seismic Survey	2010/5714	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	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
Harmony 3D Marine Seismic Survey	2012/6699	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
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
Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R	2006/2609	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5715	Not Controlled Action (Particular Manner)	Post-Approval
West Anchor 3D Marine Seismic Survey	2008/4507	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

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
Continental Slope Demersal Fish Communities	North-west
Exmouth Plateau	North-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Internesting buffer	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 buffer	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Mating	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Natator depressus Flatback Turtle [59257]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting buffer	Known to occur
Natator depressus Flatback Turtle [59257]	Mating	Known to occur
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Seabirds		
Ardenna pacifica Wedge-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
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	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

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 13-Jul-2023

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:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	48
Listed Migratory Species:	62

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:	3
Commonwealth Heritage Places:	1
Listed Marine Species:	103
Whales and Other Cetaceans:	32
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	5
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:	23
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	192
Key Ecological Features (Marine):	5
Biologically Important Areas:	35
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Legal Status
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
EEZ and Territorial Sea
Extended Continental Shelf

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [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
Limosa lapponica menzbieri		
Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
Macronectes giganteus		
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
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
Pterodroma mollis		
Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis		
Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri		
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
FISH		
Milyeringa veritas		
Cape Range Cave Gudgeon, Blind Gudgeon [66676]	Vulnerable	Species or species habitat known to occur within area
Ophisternon candidum		
Blind Cave Eel [66678]	Vulnerable	Species or species habitat known to occur within area
Thunnus maccoyii		
Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area
MAMMAL		
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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 may occur within area

Scientific Name	Threatened Category	Presence Text
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
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
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
Rhinonicteris aurantia (Pilbara form)		
Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area
REPTILE		
Aipysurus apraefrontalis		
Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus foliosquama		
Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat 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	Species or species habitat 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]	Vulnerable	Species or species habitat likely to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		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 likely to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Hydroprogne caspia		
Caspian Tern [808]		Breeding 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

Scientific Name	Threatened Category	Presence Text
Phaethon lepturus		
White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Sterna dougallii		
Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons		
Little Tern [82849]		Species or species habitat may occur within area
Thalassarche carteri		
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Anoxypristis cuspidata		
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera bonaerensis		
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Carcharhinus longimanus		
Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Dugong dugon		
Dugong [28]		Breeding known to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Eubalaena australis as Balaena glacialis australis		
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
Mobula alfredi as Manta alfredi		
Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris		
Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]		Species or species habitat known to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus		
Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis		
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa sahulensis as Sousa chinensis		
Australian Humpback Dolphin [87942]		Species or species habitat known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Glareola maldivarum		
Oriental Pratincole [840]		Species or species habitat may occur within area
Limnodromus semipalmatus		
Asian Dowitcher [843]		Species or species habitat known to occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area
Thalasseus bergii		
Greater Crested Tern [83000]		Breeding known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Defence	
Defence - EXMOUTH VLF TRANSMITTER STATION [50122]	WA
Defence - EXMOUTH VLF TRANSMITTER STATION [50123]	WA
Defence - LEARMONTH RADAR SITE - VLAMING HEAD EXMOUTH [50001]	WA

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Natural		
Ningaloo Marine Area - Commonwealth Waters	WA	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna pacifica as Puffinus pacificus		
Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Bubulcus ibis as Ardea ibis		
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area
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 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 known to occur within area

Scientific Name	Threatened Category	Presence Text
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		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
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

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area
Papasula abbotti		
Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus		
White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phaethon lepturus fulvus		
Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Pterodroma 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]		Species or species habitat may occur within area
Sternula nereis as Sterna nereis		
Fairy Tern [82949]		Breeding known to occur within area
Thalassarche carteri		
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalasseus bengalensis as Sterna bengalensis		
Lesser Crested Tern [66546]		Breeding known to occur within area
Thalasseus bergii as Sterna bergii		
Greater Crested Tern [83000]		Breeding known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area
Fish		
Acentronura larsonae		
Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
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
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

Scientific Name	Threatened Category	Presence Text
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
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
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
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

Scientific Name	Threatened Category	Presence Text
Solenostomus cyanopterus		
Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus		
Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus		
Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris		
Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
Dugong dugon		
Dugong [28]		Breeding known to occur within area
Reptile		
Acalyptophis peronii		
Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis		
Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus duboisii		
Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii		
Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus foliosquama		
Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus laevis		
Olive Seasnake [1120]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus tenuis		
Brown-lined Seasnake [1121]		Species or species habitat may occur within area
Astrotia stokesii		
Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Chitulia ornata as Hydrophis ornatus		
Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Disteira kingii		
Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major		
Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus		
Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi		
North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Hydrelaps darwiniensis		
Black-ringed Seasnake [1100]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis macdowelli as Hydrophis mcdowelli Small-headed Seasnake [75601]		Species or species habitat may occur within area
Leioselasma czeblukovi as Hydrophis czeblukovi Fine-spined Seasnake, Geometrical Seasnake [87374]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area

Current Scientific Name	Status	Type of Presence
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
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]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahulensis Australian Humpback Dolphin [87942]		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

Current Scientific Name	Status	Type of Presence
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat 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
Gascoyne	Habitat Protection Zone (IUCN IV)
Gascoyne	Multiple Use Zone (IUCN VI)
Montebello	Multiple Use Zone (IUCN VI)
Gascoyne	National Park Zone (IUCN II)
Ningaloo	Recreational Use Zone (IUCN IV)

Habitat Critical to the Survival of Marine Turtles

Scientific Name	Behaviour	Presence
Aug - Sep		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur
Nov-Feb		

Scientific Name	Behaviour	Presence
Caretta caretta		
Loggerhead Turtle [1763]	Nesting	Known to occur
Nov - May		
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Nesting	Known to occur

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 Management Area	WA
Barrow Island	Marine Park	WA
Bessieres Island	Nature Reserve	WA
Boodie, Double Middle Islands	Nature Reserve	WA
Cape Range	National Park	WA
Great Sandy Island	Nature Reserve	WA
Jurabi Coastal Park	5(1)(h) 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
Round Island	Nature Reserve	WA
Serrurier Island	Nature Reserve	WA
Thevenard Island	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Unnamed WA40322	5(1)(h) Reserve	WA
Unnamed WA40828	5(1)(h) Reserve	WA
Unnamed WA41080	5(1)(h) Reserve	WA
Unnamed WA44665	5(1)(h) Reserve	WA

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Cape Range Subterranean Waterways	WA

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Gorgon Gas Development	2003/1294		Assessment
Project Highclere Cable Lay and Operation	2022/09203		Completed
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
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 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

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
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
Light Crude Oil Production	2001/365	Controlled Action	Post-Approval
Nava-1 Cable System	2001/510	Controlled Action	Completed
Ningaloo Lighthouse Development, 17km north west Exmouth, Western Australia	2020/8693	Controlled Action	Assessment Approach
Pluto Gas Project	2005/2258	Controlled Action	Completed
Pluto Gas Project Including Site B	2006/2968	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
Yardie Creek Road Realignment Project	2021/8967	Controlled Action	Assessment Approach
Not controlled action			
'Goodwyn A' Low Pressure Train Project	2003/914	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
'Van Gogh' Oil Appraisal Drilling Program, Exploration Permit Area WA-155-P(1)	2006/3148	Not Controlled Action	Completed
Airlie Island soil and groundwater investigations, Exmouth Gulf, offshore Pilbara coast	2014/7250	Not Controlled Action	Completed
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
Construction and operation of an unmanned sea platform and connecting pipeline to Varanus Island for	2004/1703	Not Controlled Action	Completed
Controlled Source Electromagnetic Survey	2007/3262	Not Controlled Action	Completed
Development of Halyard Field off the west coast of WA	2010/5611	Not Controlled Action	Completed
Development of Mutineer and Exeter petroleum fields for oil production, Permit	2003/1033	Not Controlled Action	Completed
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Exploration Well (Taunton-2)	2002/731	Not Controlled Action	Completed
Exploration Well in Permit Area WA-155-P(1)	2002/759	Not Controlled Action	Completed
Exploratory drilling in permit area WA-225-P	2001/490	Not Controlled Action	Completed
Extension of Simpson Oil Platforms & Wells	2002/685	Not Controlled Action	Completed
HCA05X Macedon Experimental Survey	2004/1926	Not Controlled Action	Completed
Hess Exploration Drilling Programme	2007/3566	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Infill Production Well (Griffin-9)	2001/417	Not Controlled Action	Completed
Jansz-2 and 3 Appraisal Wells	2002/754	Not Controlled Action	Completed
Klammer 2D Seismic Survey	2002/868	Not Controlled Action	Completed
Maia-Gaea Exploration wells	2000/17	Not Controlled Action	Completed
Montesa-1 and Bultaco-1 Exploration Wells	2000/102	Not Controlled Action	Completed
North Rankin B gas compression facility	2005/2500	Not Controlled Action	Completed
Pipeline System Modifications Project	2000/3	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Searipple gas and condensate field development	2000/89	Not Controlled Action	Completed
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
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
Wanda Offshore Research Project, 80 km north-east of Exmouth, WA	2018/8293	Not Controlled Action	Completed
Western Flank Gas Development	2005/2464	Not Controlled Action	Completed
Wheatstone 3D seismic survey, 70km north of Barrow Island	2004/1761	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Kate' 3D marine seismic survey, exploration permits WA-320-P and WA-345-P, 60km	2005/2037	Not Controlled Action (Particular Manner)	Post-Approval
'Tourmaline' 2D marine seismic survey, permit areas WA-323-P, WA-330-P and WA-32	2005/2282	Not Controlled Action (Particular Manner)	Post-Approval
"Leanne" offshore 3D seismic exploration, WA-356-P	2005/1938	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D seismic surveys	2005/2151	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey	2012/6296	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2005/2146	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
3D marine seismic survey	2008/4281	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey (WA-482-P, WA-363-P), WA	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in Permit Areas WA-15-R, WA-18-R, WA-205-P, WA-253-P, WA-267-P and WA-268-P	2003/1271	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in WA 457-P & WA 458-P, North West Shelf, offshore WA	2013/6862	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey over petroleum title WA-268-P	2007/3458	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Surveys - Contos CT-13 & Supertubes CT-13, offshore WA	2013/6901	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic survey	2006/2715	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, WA	2008/4428	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey in the Carnarvon Bsin on the North West Shelf	2002/778	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
Babylon 3D Marine Seismic Survey, Commonwealth Waters, nr Exmouth WA	2013/7081	Not Controlled Action (Particular Manner)	Post-Approval
Balnaves Condensate Field Development	2011/6188	Not Controlled Action (Particular Manner)	Post-Approval
Bonaventure 3D seismic survey	2006/2514	Not Controlled Action (Particular Manner)	Post-Approval
Cable Seismic Exploration Permit areas WA-323-P and WA-330-P	2008/4227	Not Controlled Action (Particular Manner)	Post-Approval
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
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
DAVROS MC 3D marine seismic survey northwaet of Dampier, WA	2013/7092	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Drilling Program	2010/5532	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
Demeter 3D Seismic Survey, off Dampier, WA	2002/900	Not Controlled Action (Particular Manner)	Post-Approval
Draeck 3D Marine Seismic Survey, WA-205-P	2006/3067	Not Controlled Action (Particular Manner)	Post-Approval
Drilling 35-40 offshore exploration wells in deep water	2008/4461	Not Controlled Action (Particular Manner)	Post-Approval
Earthworks for kitchen/mess, cyclone refuge building & Compression Plant, Varanus Island	2013/6900	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Eendracht Multi-Client 3D Marine Seismic Survey	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M3 & Vincent 4D Marine Seismic Surveys	2008/3981	Not Controlled Action (Particular Manner)	Completed
Enfield M3 4D, Vincent 4D & 4D Line Test Marine Seismic Surveys	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
Enfield 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
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
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 Manner)	Post-Approval
Huzzas phase 2 marine seismic survey, Exmouth Plateau, Northern Carnarvon Basin, WA	2013/7093	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
John Ross & Rosella Off Bottom Cable Seismic Exploration Program	2008/3966	Not Controlled Action (Particular Manner)	Post-Approval
Judo Marine 3D Seismic Survey within and adjacent to WA-412-P	2009/4801	Not Controlled Action (Particular Manner)	Post-Approval
Judo Marine 3D Seismic Survey within and adjacent to WA-412-P	2008/4630	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
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
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Ocean Bottom Cable Seismic Survey	2005/2017	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Canning Multi Client 2D Marine Seismic Survey	2010/5393	Not Controlled Action (Particular Manner)	Post-Approval
Orcus 3D Marine Seismic Survey in WA-450-P	2010/5723	Not Controlled Action (Particular Manner)	Post-Approval
Osprey and Dionysus Marine Seismic Survey	2011/6215	Not Controlled Action (Particular Manner)	Post-Approval
Palta-1 exploration well in Petroleum Permit Area WA-384-P	2011/5871	Not Controlled Action (Particular Manner)	Post-Approval
Pomodoro 3D Marine Seismic Survey in WA-426-P and WA-427-P	2010/5472	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees 4D Marine Seismic Monitor Survey, HCA12A	2012/6579	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees-Macedon 3D marine seismic survey	2005/2325	Not Controlled Action (Particular Manner)	Post-Approval
Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
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
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
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	2010/5715	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5679	Not Controlled Action (Particular Manner)	Post-Approval
Vincent M1 and Enfield M5 4D Marine Seismic Survey	2010/5720	Not Controlled Action (Particular Manner)	Post-Approval
Warramunga Non-Inclusive 3D Seismic Survey	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
West Anchor 3D Marine Seismic Survey	2008/4507	Not Controlled Action (Particular Manner)	Post-Approval
West Panaeus 3D seismic survey	2006/3141	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone 3D MAZ Marine Seismic Survey	2011/6058	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2007/3941	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2008/4134	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
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
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

Biologically Important Areas

Scientific Name	Behaviour	Presence
Dugong		

Scientific Name	Behaviour	Presence
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		
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

Scientific Name	Behaviour	Presence
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
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 pacifica Wedge-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

Scientific Name	Behaviour	Presence
Thalasseus bengalensis		
Lesser Crested Tern [66546]	Breeding	Known to occur
Sharks		
Rhincodon typus		
Whale Shark [66680]	Foraging	Known to occur
Rhincodon typus		
Whale Shark [66680]	Foraging (high density prey)	Known to occur
Whales		
Balaenoptera musculus brevicauda		
Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda		
Pygmy Blue Whale [81317]	Foraging	Known to occur
Balaenoptera musculus brevicauda		
Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae		
Humpback Whale [38]	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 are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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appendix c consultation material

gorgon gas development jansz-io compression and gorgon umbilical installation

environment plan consultation

October 2022

background

Chevron Australia, on behalf of the Gorgon Joint Venture, is the operator for the Gorgon Gas Development (also known as the Gorgon Project).

The Gorgon Project comprises offshore production wells and pipeline infrastructure associated with the Jansz-Io and Gorgon gas fields that gather and transport gas to the Gorgon liquified natural gas (LNG) facility (the Facility) and domestic gas plant on Barrow Island, where it is processed.

To maintain long-term natural gas supply to the Facility, Chevron Australia plans to modify the subsea gas gathering network by installing a subsea compression station and associated infrastructure in the Jansz-Io gas fields. In addition, power in the Gorgon field will be supplemented by the installation of a new umbilical.

Chevron Australia is therefore developing State and Commonwealth Environment Plans to account for the installation of the Jansz-Io Compression (JIC) infrastructure and the additional umbilical to the Gorgon gas field (Gorgon umbilical).

location and water depths

The Jansz-Io gas fields are located within production licences WA-36-L, WA-39-L and WA-40-L approximately 200 km off the north-west coast of Western Australia (WA) in water depths of approximately 1,350 m.

The Gorgon gas field is located within production licences WA-37-L and WA-38-L, approximately 130 km off the north-west coast of WA, and 65 km north-west of Barrow Island in water depths of approximately 200 m.

Installation activities will also occur on Barrow Island and in State waters adjacent to the north-west coast of Barrow Island in water depths of approximately 12 – 25 m.

Please refer to Table 1 for the coordinates of the proposed locations where infrastructure will be installed and Figures 1 and 2 to see maps of the activity area.

schedule and duration

Under a current project timeline, JIC installation activities are scheduled to commence in mid-2024 and are anticipated to be completed in mid-2026.

The Gorgon umbilical is planned to be installed from late 2023 / early 2024 and is anticipated to be completed mid-2024.

Further details on the timing of each work scope are presented in Table 1.

activity overview

JIC will use proven subsea compression technology to enhance the recoverability of the Jansz-Io fields and maintain supply of natural gas to the Facility on Barrow Island.

Chevron Australia plans to install the following infrastructure:

- Subsea structures, including a subsea compression station, subsea compression manifold station and associated foundations
- Spools, umbilicals and flying leads
- Field control station – a normally unattended, floating facility moored to the seabed
- JIC umbilical to supply power from Barrow Island to the field control station and subsea structures
- Gorgon umbilical to supplement power supply infrastructure in the Gorgon field
- Pipeline crossings and rock armour as required.

The new umbilicals will be installed adjacent to the existing offshore Gorgon and Jansz feed gas pipelines. On Barrow Island, the new umbilicals will be installed within trenches dug in the same corridor that was previously cleared for installation of the existing umbilicals and pipelines.

The shore crossing will be undertaken by horizontal directional drilling (HDD) at a site to be established approximately 150 metres inland from North White's Beach. The HDD bore holes will extend under the beach to approximately 550 metres offshore, to avoid disturbance to foreshore vegetation and the nearshore marine environment.

Installation activities will require the use of installation vessels, support vessels, helicopters and temporary accommodation vessels.

Further details on the infrastructure to be installed, are included in Table 1.

marine exclusion zones

During installation of the umbilicals, Notices to Mariners will be sought, to advise vessels to navigate with caution in the area. A temporary 500 m 'safe navigation area' will be in place around vessels engaged in installation activities.

There are no exclusion zones over the existing infrastructure in the Gorgon and Jansz-Io gas fields and no exclusion zone will be sought for the new JIC subsea infrastructure or the Gorgon umbilical. Chevron Australia asks stakeholders to exercise due caution when fishing over these areas.

Once installed, a 500 m petroleum safety zone will be in place for the field control station.

environmental approvals

In accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cwth), the installation of the JIC infrastructure and Gorgon umbilical in

Commonwealth Waters constitutes a significant modification to the accepted *Gorgon Gas Development Pipeline and Subsea Infrastructure Installation and Pre-commissioning Environment Plan*.

Chevron Australia intends to revise the Environment Plan to include the JIC and Gorgon umbilical installation scopes of work and submit the Environment Plan to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment.

In addition, installation activities in WA State Waters and onshore will be addressed in the *Gorgon and Jansz Feed Gas Pipeline Umbilicals Installation Environment Plan* to be submitted to the Department of Mines, Industry Regulation and Safety (DMIRS) in accordance with the requirements of the Petroleum (Submerged Lands) (Environment) Regulations 2012 (WA) and the Petroleum Pipelines (Environment) Regulations 2012 (WA).

The Environment Plans will describe the environment in which the installation activities are planned to take place, provide an assessment of the impacts and risks arising from the activities, and identify control measures to manage the potential impacts and risks to levels that are acceptable and as low as reasonably practicable.

The Environment Plans will also outline how Chevron Australia has engaged with relevant stakeholders, whose interests, functions, and activities may be affected. The Environment Plan will describe how stakeholder feedback has been considered and addressed.

implications for stakeholders

Chevron Australia will keep informed stakeholders who identify an interest in our planned activities

Chevron Australia is aiming to submit the Environment Plans associated with these activities to NOPSEMA and DMIRS in late 2022. At this time, the Commonwealth jurisdiction Environment Plan will be made publicly available on the NOPSEMA website and a summary of the State jurisdiction Environment Plan will be made publicly available on the DMIRS website.

The potential impacts and risks to the environment and a list of the key control measures currently being proposed, are summarised in Table 2.

No significant impacts or risks to the environment have been identified in the risk workshops completed for the installation works.

Further details of the risk assessment will be provided in the Environment Plans and will incorporate feedback received from relevant stakeholders during this consultation process

commercial fishing

Chevron Australia recognises the commercial fishing sector is an important and relevant stakeholder group whose members may have interests, functions, and activities that could be affected by the activities associated with this program.

Chevron Australia is committed to working proactively with the commercial fishing sector and on-the-water communications and cooperation is a Chevron Australia priority.

Table 1: JIC and Gorgon Umbilical Infrastructure Details

Infrastructure	Details	Indicative Installation Timing*	Latitude South	Longitude East	Depth (~m)
Subsea Compression Station	Electric powered subsea compression station for the Jansz-Io field. Receives power from via the Field Control Station.	Late 2025 – Late 2026	19° 48’ 35.00”S	114° 36’ 20.84”E	1,345
Subsea Compression Manifold Station	Manifold station required for the operation of the Subsea Compression Station.	Late 2025 – Mid 2026	19° 48’ 32.44”S	114° 36’ 20.24”E	1,345
Field Control Station	Moored floating facility that will accommodate electrical equipment and will be normally unattended.	Mooring suction piles: Mid/Late 2024 Field Control Station: Mid/Late 2025	19° 52’ 43.67”S	114° 36’ 28.91”E	1,275
Spools, umbilicals and flying leads	The Subsea Compression Station, Subsea Compression Manifold Station and existing subsea infrastructure will be connected by spools, umbilicals and flying leads.	Mid/Late 2025 – Mid 2026	To be installed between the Subsea Compression Station and the Subsea Compression Manifold Station		1,345
JIC Umbilical	New umbilical to supply power from Barrow Island to the field control station and subsea structures. The umbilical will run adjacent to the existing feed gas pipeline.	Mid/Late 2025 – Mid 2026	Refer to Figure 1 for location		12 – 1,275
Gorgon Umbilical	New umbilical to run from Barrow Island to the Gorgon gas field to supplement existing power supply infrastructure. The umbilical will run adjacent to the existing feed gas pipeline.	Late 2023 – Mid 2024	Refer to Figure 1 for location		12 – 130
Pipeline and umbilical crossings	Concrete mattresses will be installed over existing pipelines and umbilicals to allow for installation of the JIC infrastructure and Gorgon umbilical.	JIC: Late 2025 Gorgon: Late 2023 – Early 2024	Refer to Figure 1 for location		25 – 1,345

*Calendar year indicative timing provided

Table 2: Summary of relevant aspects and proposed controls

Aspect	Proposed Control
Commercial Fishing and Other Marine Users	• Notification to relevant stakeholders a minimum of four weeks prior to the commencement of activities • Consultation with commercial fishers and their representative organisations, and government departments (i.e. DPIRD, Australian Fisheries Management Authority) to inform decision making for the activity and development of the Environment Plan. • Vessels will meet the crew competency, navigation equipment, and radar requirements as per the Chevron Australia's Marine, Safety Reliability and Efficiency process
Marine Fauna Interaction	• Vessels will implement fauna caution and no approach zones in accordance with the Environment Protection Biodiversity Conservation Regulations 2000 – Part 8 Division 8.1
Planned Discharges	• All vessel discharges managed in accordance with MARPOL 73/78 • Chevron Australia's Marine, Safety Reliability and Efficiency process for vessel inspections implemented • Hazardous chemicals selected and managed in accordance with Chevron Australia's Hazardous Materials Management Procedure.
Air Emissions	• Vessels will hold (as appropriate to vessel class) a valid International Air Pollution Prevention certificate, current international energy efficiency certificate and a Ship Energy Efficiency Management Plan as per MARPOL 73/78 Annex VI. • Chevron Australia's Marine, Safety Reliability and Efficiency process for vessel inspections implemented
Invasive Marine Pests	• Chevron Australia's Quarantine Management System implemented • Maritime Arrivals Reporting System - Vessels coming from overseas will have clearance • Compliance with Australian Ballast Water Requirements • Marine vessels maintain an up-to-date international antifouling coating certification • Biofouling management plan, record book and risk assessment implemented
Light Emissions	• Pre-installation inspections of vessels to identify opportunities to reduce light spill • Vessels working at night within critical habitat and during turtle nesting season will reduce lighting to the minimum required for safe operations
Unplanned Releases	• Hazardous chemicals selected and managed in accordance with Chevron Australia's Hazardous Materials Management Procedure • All unplanned releases reported, cleaned up and recorded in accordance with Chevron Australia's Incident Investigation and Reporting Process • Chevron Australia's Marine, Safety Reliability and Efficiency process implemented • Marine spill response implemented in accordance with the response arrangements and strategies detailed in the Oil Pollution Emergency Plan, including operational and scientific monitoring if required
Underwater sound	• Seabed surveys will utilise low impact acoustic sources (no seismic) • Noise modelling to inform potential impacts and input to mitigation and management measures • Vessels will implement fauna caution and no approach zones in accordance with the Environment Protection Biodiversity Conservation Regulations 2000 – Part 8 Division 8.1.
Waste	• Waste managed in accordance with legislative requirements and vessel Waste Management Plan • Wastes managed and disposed of in a manner that prevents accidental loss to the environment • Wastes transported onshore to recycling or disposal facilities by a licensed waste contractor.
Terrestrial Disturbance	• Chevron Australia has prepared a separate Fact Sheet outlining controls to be implemented to manage impacts and risks associated with terrestrial disturbance on

Aspect	Proposed Control
	Barrow Island. If you would like a copy, please contact the email address listed in the 'providing feedback' section below

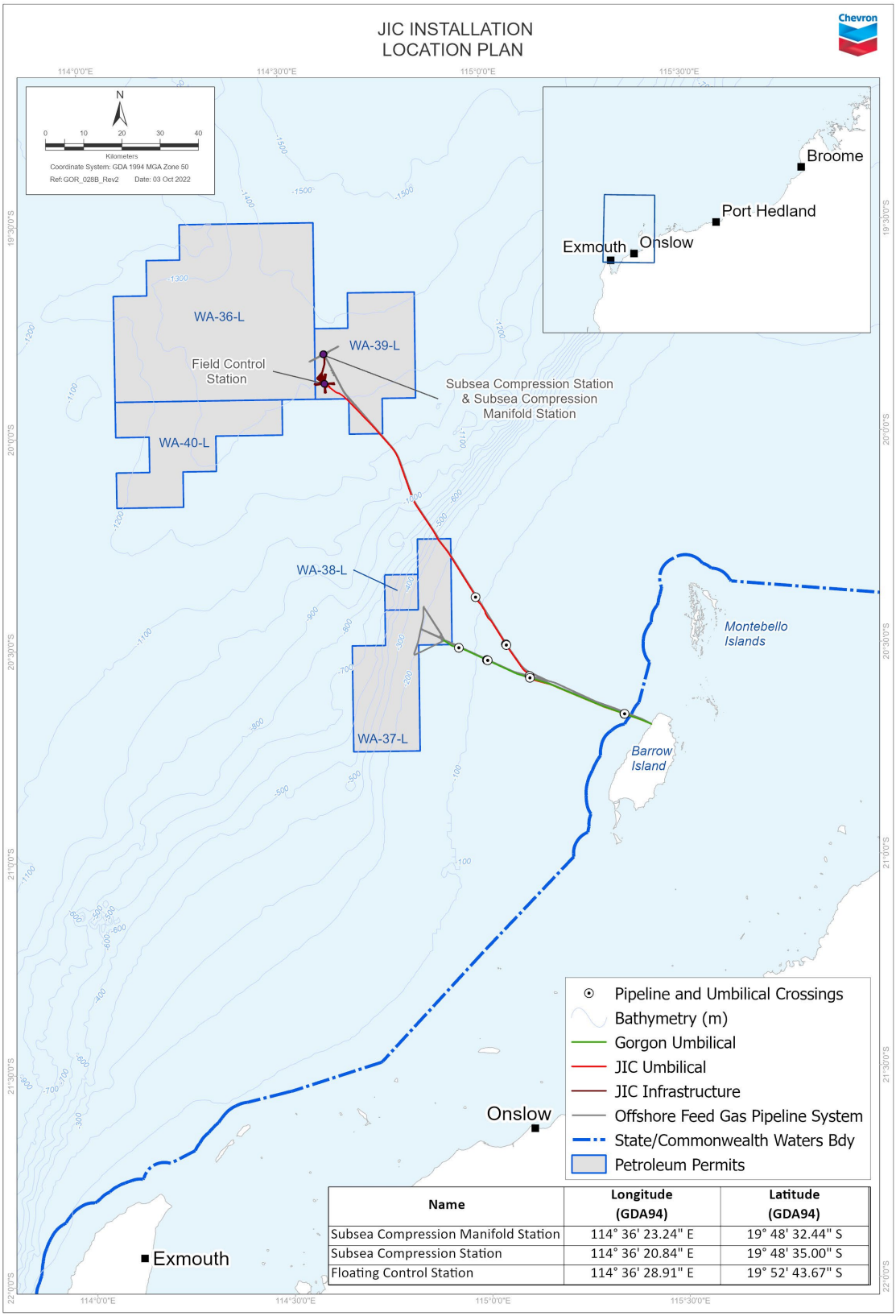
providing feedback

Feedback from stakeholders on potential impacts associated with Chevron Australia's activities will be carefully considered and assessed.

Please note that stakeholder feedback and Chevron Australia's response will be included in the Environment Plan.

Feedback can be directed to:

Jeff Hunter
HSE – Regulatory Affairs Advisor
abuenvplaninfo@chevron.com
(08) 9216 4525



Name	Longitude (GDA94)	Latitude (GDA94)
Subsea Compression Manifold Station	114° 36' 23.24" E	19° 48' 32.44" S
Subsea Compression Station	114° 36' 20.84" E	19° 48' 35.00" S
Floating Control Station	114° 36' 28.91" E	19° 52' 43.67" S

Figure 1: Jansz-lo Compression and Gorgon Umbilical Infrastructure Installation Map

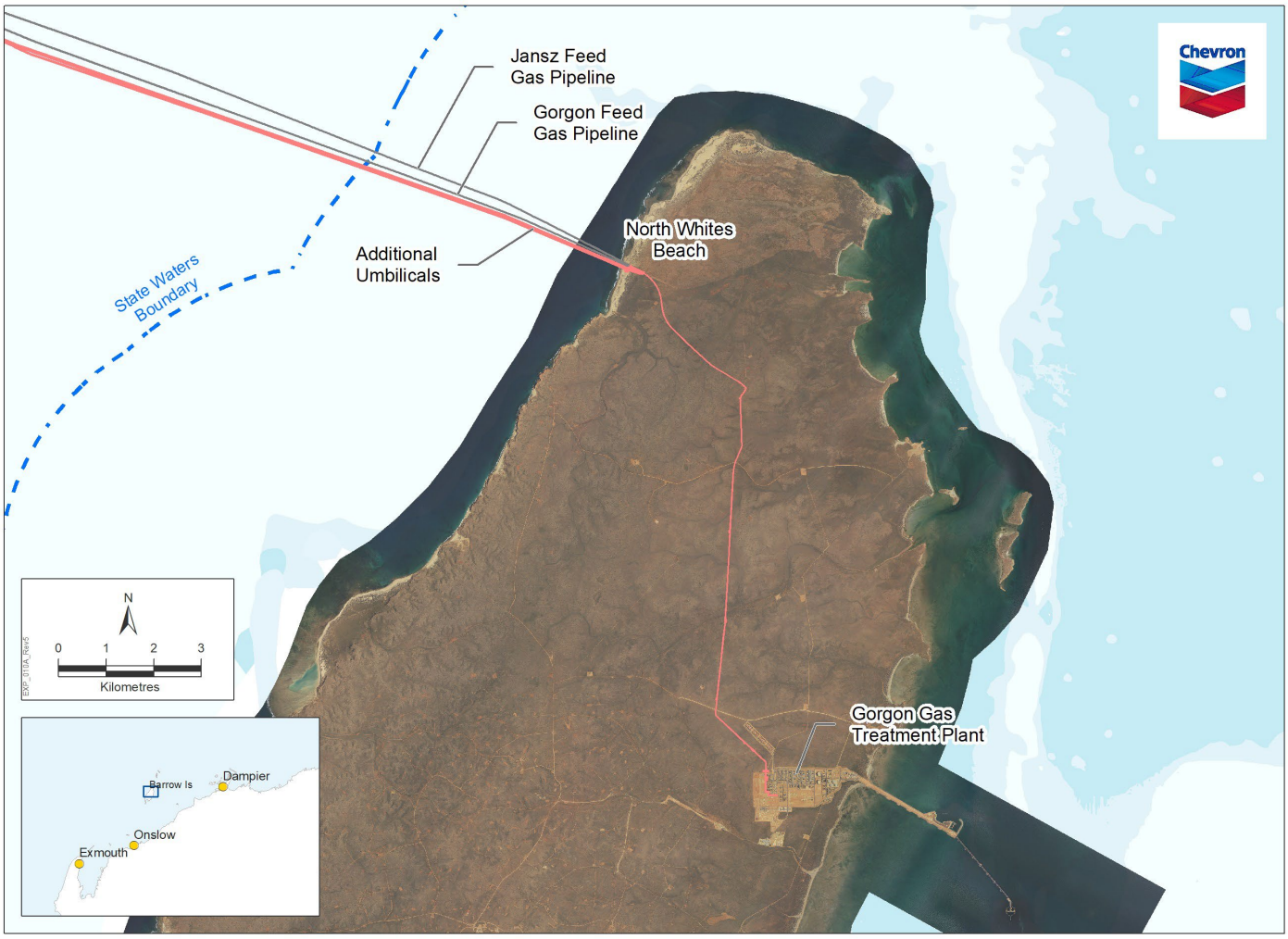
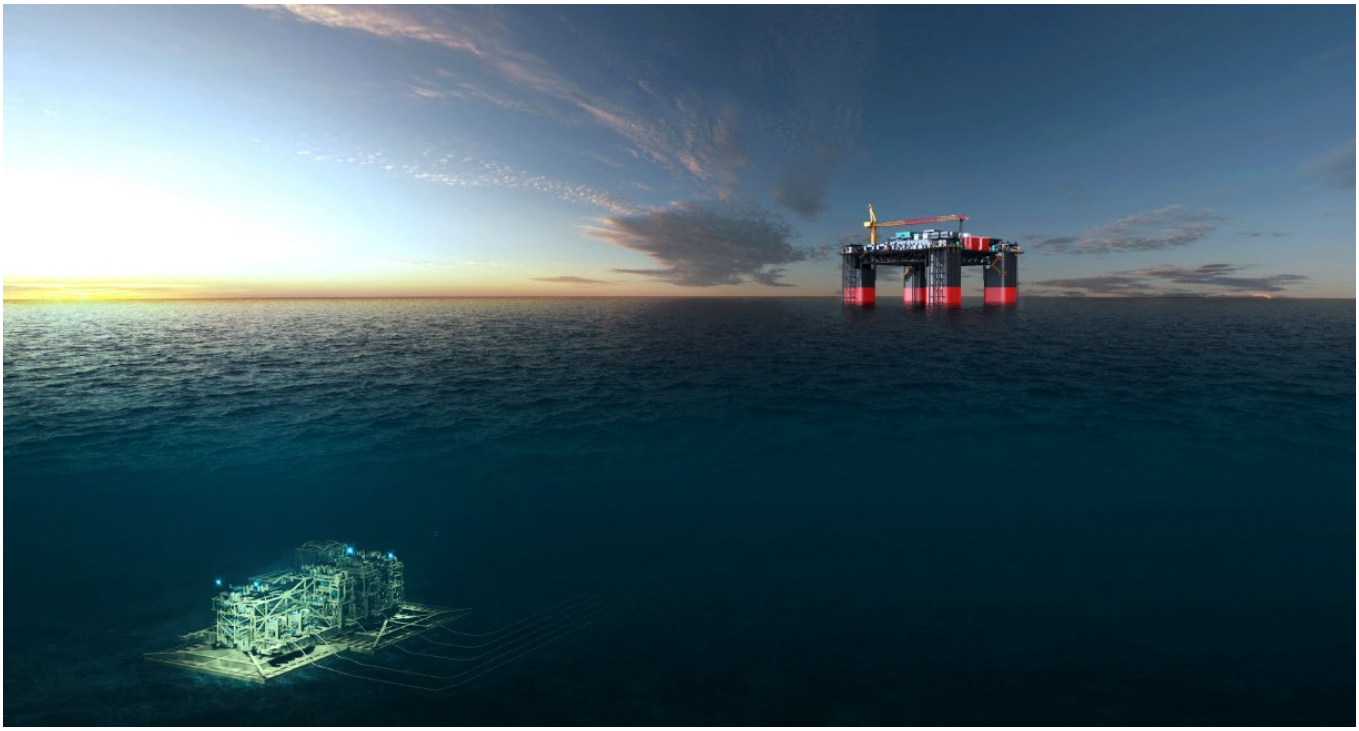


Figure 2: Jansz-lo Compression and Gorgon Umbilical Infrastructure Installation Map (Onshore and State Waters)

jansz-io compression installation

relevant persons information sheet

february 2023



overview

Chevron Australia, on behalf of the Gorgon Joint Venture, operates the Gorgon Project (Gorgon) in Western Australia.

Gorgon comprises offshore production wells and pipeline infrastructure that gathers natural gas from the Jansz-Io and Gorgon gas fields and transports it to a facility on Barrow Island for processing.

To maintain long-term gas supply to the facility, Chevron Australia plans to install a subsea compression station and associated infrastructure in the Jansz-Io gas fields ('Jansz-Io Compression'), using proven subsea compression technology to enhance the recoverability of gas. The compression station includes two pumps and three compressors and will be placed on 'mud mats' on the seabed.

To maintain the reliability of the offshore gas gathering systems, Chevron Australia will also install two additional control and electrical umbilicals in the existing feedgas pipeline system that extends between the offshore fields and the Gorgon facility on Barrow Island. The umbilicals provide electrical power and other essential functions to the gas fields.

Chevron Australia is developing State and Commonwealth Environment Plans for the Jansz-Io Compression and Gorgon umbilical installation and welcomes feedback from relevant persons.

location and water depths

The Jansz-Io gas fields are located within production licences WA-36-L, WA-39-L and WA-40-L, approximately 200 kilometres off the north-west

coast of Western Australia (WA) in water depths of approximately 1,350 meters.

The Gorgon gas field is located within production licences WA-37-L and WA-38-L, 130 kilometres off the north-west coast of WA, and 65 kilometres north-west of Barrow Island in water depths of approximately 200 meters.

Installation activities will also occur on Barrow Island and in state waters adjacent to the north-west coast of Barrow Island in depths of approximately 12 to 25 metres.

Table 1 shows the coordinates and Figures 2 and 3 show maps of the installation areas.

schedule and duration

Jansz-Io Compression installation is scheduled to occur from mid-2024 to mid-2026.

Installation of the Gorgon umbilical is planned to occur from late 2023/early 2024 to mid-2024.

Table 1 provides details on the timing.

activity overview

Activities include installing, pre-commissioning, commissioning of subsea infrastructure.

Non-invasive surveys may be conducted before and after installation, including video and geophysical survey techniques.

Helicopters and installation and support vessels will be used throughout the works.

Chevron Australia plans to install the following:

- Subsea structures, including a compression station, compression manifold station and associated foundations.
- A normally unattended, floating field control station anchored to the seabed by 12 mooring lines.
- An umbilical to supply power from Barrow Island to the field control station, and power cables, known as flying leads, from the control station to the subsea station.
- An umbilical to supplement power supply in the Gorgon field.
- Pipeline crossings and rock armour as required.

The new umbilicals will be installed adjacent to the existing offshore Gorgon and Jansz-Io feed gas pipelines. On Barrow Island, the new umbilicals will be installed in a trench within the approved right of way for existing infrastructure.

The shore crossing for the umbilicals will be undertaken by horizontal directional drilling from a site to be established approximately 150 metres inland from North White's Beach, extending under the beach to approximately 550 metres offshore, to avoid disturbing foreshore vegetation and the nearshore marine environment.

Table 1 includes details on the infrastructure to be installed.

EMBA: environment that may be affected

Installation activities will have the potential for environment interactions, known as 'aspects'.

Planned aspects result in environmental impacts and changes to the environment and may present environmental risks.

Unplanned releases and events may occur while conducting activities.

If an emergency condition occurs, the size of the 'environment that may be affected', also known as an 'EMBA', could increase.

The EMBA is based on the emergency condition's worst case environmental scenario, which in this case is an unplanned spill event from a vessel collision.

The EMBA has been defined through combining 300 simulations of vessel collisions under different hydrological and meteorological conditions representative of summer, winter and transition seasons in the north-west. Figure 1 shows the EMBA.

Control measures to prevent this event are in place, but Chevron Australia is required to assess this highly unlikely scenario.

In this scenario, cultural, ecological and social values and sensitivities may be exposed to hydrocarbons. These are considered environmental risks because they are not planned to occur.

Table 2 lists potential environmental impacts, risks and control measures.

safe navigation area and marine exclusion zone

During installation of the infrastructure, notices to mariners will be sought, to advise vessels to navigate with caution. A temporary 500-metre exclusion zone will be in place around vessels engaged in installation activities.

There is currently no exclusion zone over the existing infrastructure in the Gorgon and Jansz-Io gas fields and none will be sought for the new Jansz-Io Compression subsea infrastructure or the Gorgon umbilical.

Once installed, a 500-metre exclusion zone will be in place for the field control station.

approvals process

In accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth), the installation of the Jansz-Io Compression subsea infrastructure and Gorgon umbilical in Commonwealth waters requires an environment plan to be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment and acceptance. These regulations require Chevron Australia to consult with relevant persons whose functions, interests and activities may be affected by the petroleum activity.

Installation activities in WA State waters and onshore will be addressed in an environment plan to be submitted to the Department of Mines, Industry Regulation and Safety (DMIRS) in accordance with the requirements of the Petroleum (Submerged Lands) (Environment) Regulations 2012 (WA) and the Petroleum Pipelines (Environment) Regulations 2012 (WA).

The environment plans will describe the environment in which the installation activities are planned to take place, provide an assessment of the impacts and risks arising from the activities, and identify control measures to manage the potential impacts and risks to levels that are acceptable and as low as reasonably practicable.

The environment plans outline how Chevron Australia has engaged with ‘relevant persons’, whose interests, functions, and activities may be affected and how their feedback has been considered and addressed.

your feedback

We are committed to engaging with Traditional Owners and Custodians, commercial fishers, recreational groups and other relevant individuals and organisations, as required by regulation.

We are seeking your feedback if you consider your functions, interests, or activities may be affected based on the information outlined in Table 2. Let us know if you consider there are any control measures we could implement to eliminate, reduce or avoid an effect.

You can contact us at:

- 1800 225 195
- feedback@chevron.com

If a relevant person asks that their feedback be treated as confidential, Chevron Australia will make this known to NOPSEMA and the information will be kept confidential.

what’s next

Your feedback during the consultation period will be considered and incorporated into the environment plan. 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 Australia 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 at https://australia.chevron.com/privacy.

Table 1: Jansz-Io Compression (J-IC) and Gorgon Umbilical Infrastructure Details

Infrastructure	Details	Indicative Installation Timing*	Latitude South	Longitude East	Depth (~m)
Subsea Compression Station	Electric powered subsea compression station for the Jansz-Io field. Receives power via the Field Control Station.	Late 2025 – Late 2026	19° 48' 35.00"S	114° 36' 20.84"E	1,345
Subsea Compression Manifold Station	Manifold Station required for the operation of the Subsea Compression Station.	Late 2025 – Mid 2026	19° 48' 32.44"S	114° 36' 20.24"E	1,345
Field Control Station	Moored floating facility that will accommodate electrical equipment and will be normally unattended.	Mooring suction piles: Mid/Late 2024 Field Control Station: Mid/Late 2025	19° 52' 43.67"S	114° 36' 28.91"E	1,275
Spools, umbilicals and flying leads	The Subsea Compression Station, Subsea Compression Manifold Station and existing subsea infrastructure will be connected by spools, umbilicals and flying leads.	Mid/Late 2025 – Mid 2026	Between the Subsea Compression Station and the Subsea Compression Manifold Station		1,345
J-IC Umbilical	New umbilical to supply power from Barrow Island to the field control station and subsea structures. The umbilical will run adjacent to the existing feed gas pipeline.	Mid/Late 2025 – Mid 2026	Refer to Figures 2 and 3 for location		12 – 1,275
Gorgon Umbilical	New umbilical to run from Barrow Island to the Gorgon gas field to supplement existing power supply infrastructure. The umbilical will run adjacent to the existing feed gas pipeline.	Late 2023 – Mid 2024	Refer to Figures 2 and 3 for location		12 – 130
Pipeline and umbilical crossings	Concrete mattresses will be installed over existing pipelines and umbilicals to allow for installation of the J-IC infrastructure and Gorgon Umbilical.	J-IC: Late 2025 Gorgon: Late 2023 – Early 2024	Refer to Figures 2 and 3 for location		25 – 1,345

*Calendar year indicative timing provided

Table 2: Summary of impacts/risks and key proposed controls for installation activities

Aspect	Potential interaction	Proposed Control
Planned impacts		
Physical presence of subsea infrastructure, field control station and vessels within the Operational Area (OA)	• presence of subsea infrastructure, field control station 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	• relevant parties will be advised of the commencement of key phases of the activity • marine safety information to be issued via AUSCOAST and/or Notice to Mariners (where required) prior to commencing the installation activity • vessels will meet Chevron's crew competency, navigation equipment, and radar requirements as per the *Chevron Australia's Marine, Safety Reliability and Efficiency (MSRE) process* • 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 the activity
Light emissions	• navigation and operational lighting from vessels within the OA may result in a localised and temporary change in ambient light • change in ambient light may result in the temporary attraction of light-sensitive species	• vessels will meet lighting requirements of *Chevron Australia's MSRE process* • an activity-risk assessment will be undertaken when vessels work at night within critical habitats and during turtle nesting season
Underwater sound from marine surveys, vessels and helicopter operations within the OA	• surveys, vessels and/or helicopter operations within the operational area may result in 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 • a Vessel Master (or delegate) will be on duty at all times
Seabed Disturbance	• seabed disturbance from installation activities may result in the alteration of marine habitat and a localised and temporary change in water quality	• pre-lay surveys will be conducted to identify and avoid emergent seabed features before installing subsea infrastructure. • vessels will meet the crew competency, navigation equipment, and radar requirements as per the *Chevron Australia's MSRE* process.
Air Emissions	• combustion of fuel from vessels and helicopters within the operational area may result in a localised and temporary reduction in air quality.	• reduced sulfur 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
Planned Discharges – Vessel Operations	• planned discharges from vessel operations may result in localised and temporary change in water quality	• 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

Aspect	Potential interaction	Proposed Control
		• vessels will comply with the requirements of Marine Order 91 (MARPOL 73/78 Annex I) in relation to oily bilge water discharges
Planned Discharges – Subsea Operations	• leak testing, flying lead installation and pre-commissioning activities may have the potential to result in planned discharges from subsea operations causing localised and temporary change in water quality • change in ambient water quality may result in indirect impacts to marine fauna	• subsea fluids hazardous materials will be selected and managed in accordance with *Chevron Australia's Hazardous Materials Management Procedure*
Unplanned risks		
Invasive marine pests	• planned discharged of ballast water or the presence of biofouling on vessels may have the potential to result in the introduction of an invasive marine pest	• vessels will meet the requirements of the *Chevron Australia's Quarantine Management Procedure for Marine Vessel* • ballast water exchanges will be managed in accordance with the *Australian Ballast Water Management Requirements* • vessels greater than 400 GT 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*.
Accidental release - waste	• vessel operations and subsea structure, jumpers, and tie-in spool installation activities may result in an unplanned release of waste to the environment causing marine pollution and potentially resulting in entanglement or injury to marine fauna.	• vessels will comply with the requirements of Marine Order 95 (MARPOL 73/78 Annex V) in relation to managing waste (garbage) offshore
Accidental release - fuel bunkering	• unplanned release of hazardous material from transferring materials from vessel activities may result in indirect impacts to the marine environment and fauna arising from chemical toxicity	• vessels will meet the requirements of *Chevron Australia's MSRE* process, including the pre-mobilisation inspections of equipment, couplings and secondary containment availability and refuelling/bunkering process • 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
Accidental release - vessel collision	• the potential environmental impacts associated with hydrocarbon exposure from a vessel collision event 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 *Chevron Australia's MSRE* process • notification to relevant agencies of activities and vessel movements to allow them to send warnings and/or notices to mariners prior to commencing activity • 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 response arrangements and strategies detailed in *Chevron Australia's Oil Pollution Emergency Plan*

Aspect	Potential interaction	Proposed Control
		• where required, operational and scientific monitoring will be undertaken in accordance with *Chevron Australia's Operational and Scientific Monitoring Plan.*
Accidental release – hydrocarbons from subsea infrastructure	• the potential environmental impacts associated with hydrocarbon exposures from a subsea release event may result in marine pollution, smothering of subtidal and intertidal habitats, indirect impacts to fisheries, and reduction in amenity.	• monitoring, inspection and maintenance of hydrocarbon system and infrastructure will be undertaken • source control / isolation procedures will be implemented • safe lifting of offsets from existing subsea infrastructure • emergency response will be implemented in accordance with the response arrangements and strategies detailed in *Chevron Australia's Oil Pollution Emergency Plan* • where required, operational and scientific monitoring will be undertaken in accordance with *Chevron Australia's Operational and Scientific Monitoring Plan.*
Emergency response		
Ground disturbance – shoreline spill response	• in the event of a worst-case spill event, if shoreline is impacted, implementing shoreline clean-up techniques involves 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 *Chevron Australia's Operational and Scientific Monitoring Plan.*
Physical presence—oiled wildlife response	• in the event of a worst-case spill event, if fauna is affected, 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 *Chevron Australia's Operational and Scientific Monitoring Plan.*
Onshore		
Terrestrial Disturbance	• Chevron Australia has prepared a separate Information Sheet outlining controls to be implemented to manage impacts and risks associated with terrestrial disturbance on Barrow Island. If you would like a copy, please contact the email address listed in the 'providing feedback' section below	

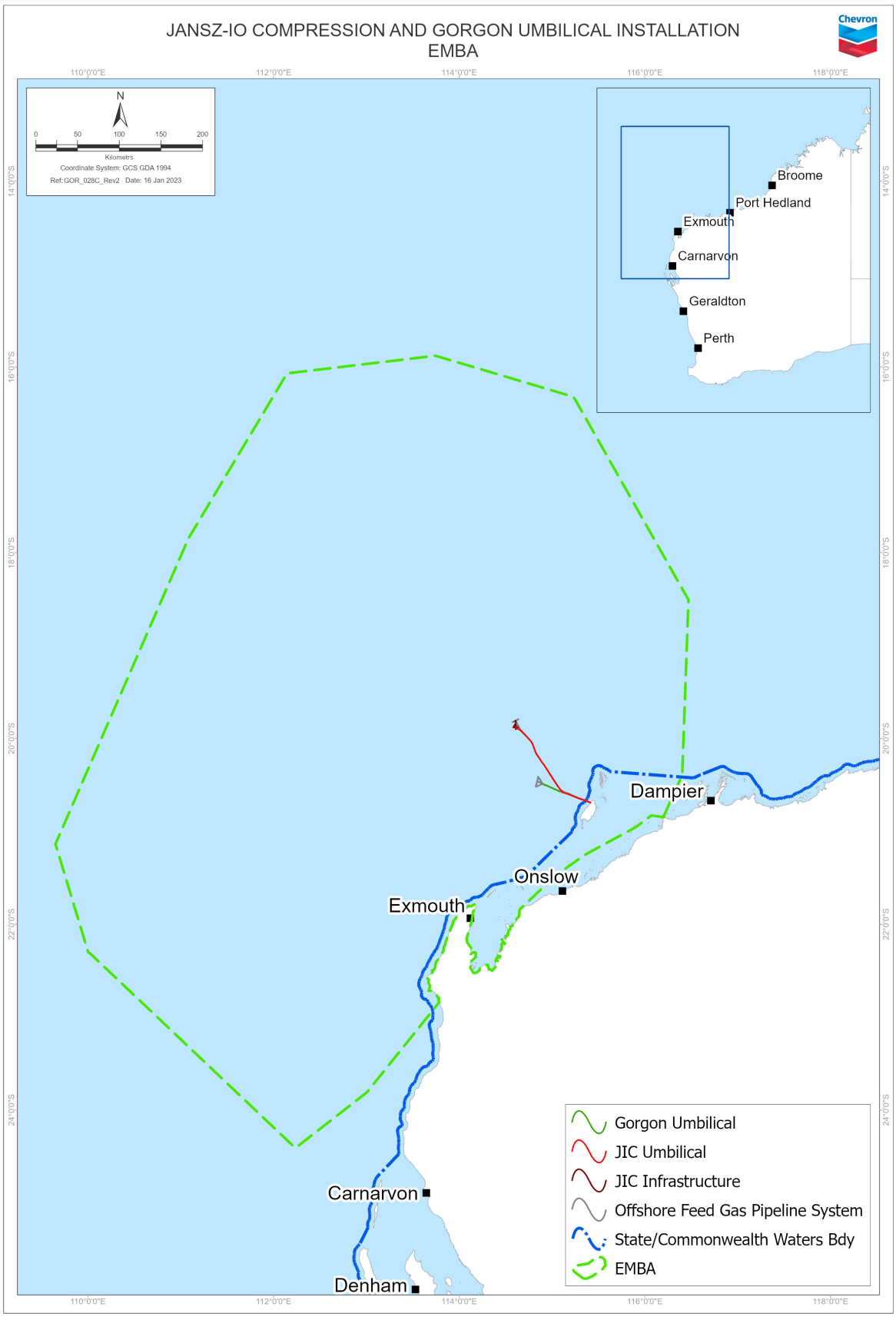
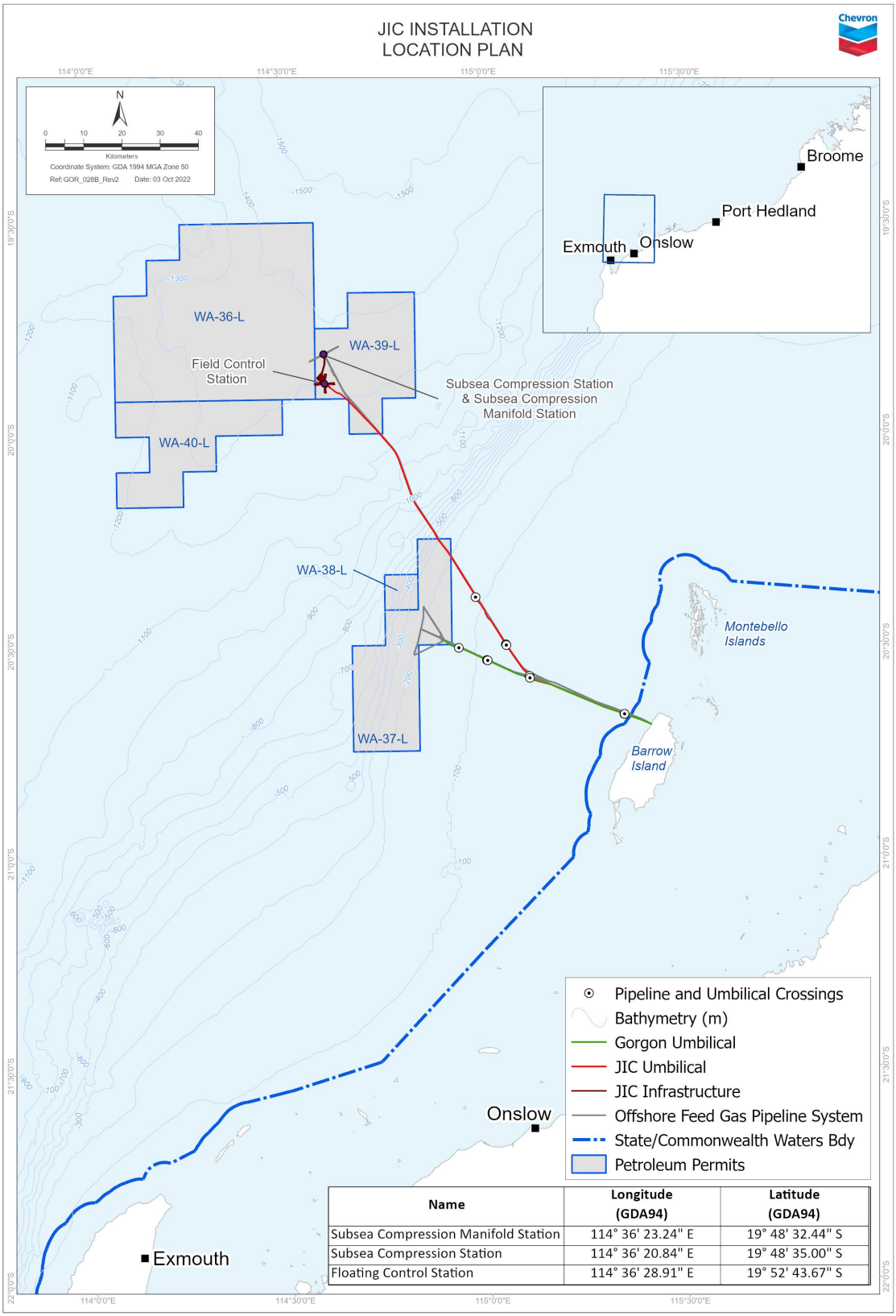


Figure 1: Jansz-Io Compression and Gorgon Umbilical Infrastructure EMBA map



Name	Longitude (GDA94)	Latitude (GDA94)
Subsea Compression Manifold Station	114° 36' 23.24" E	19° 48' 32.44" S
Subsea Compression Station	114° 36' 20.84" E	19° 48' 35.00" S
Floating Control Station	114° 36' 28.91" E	19° 52' 43.67" S

Figure 2: Jansz-Io Compression and Gorgon Umbilical Infrastructure Installation Map

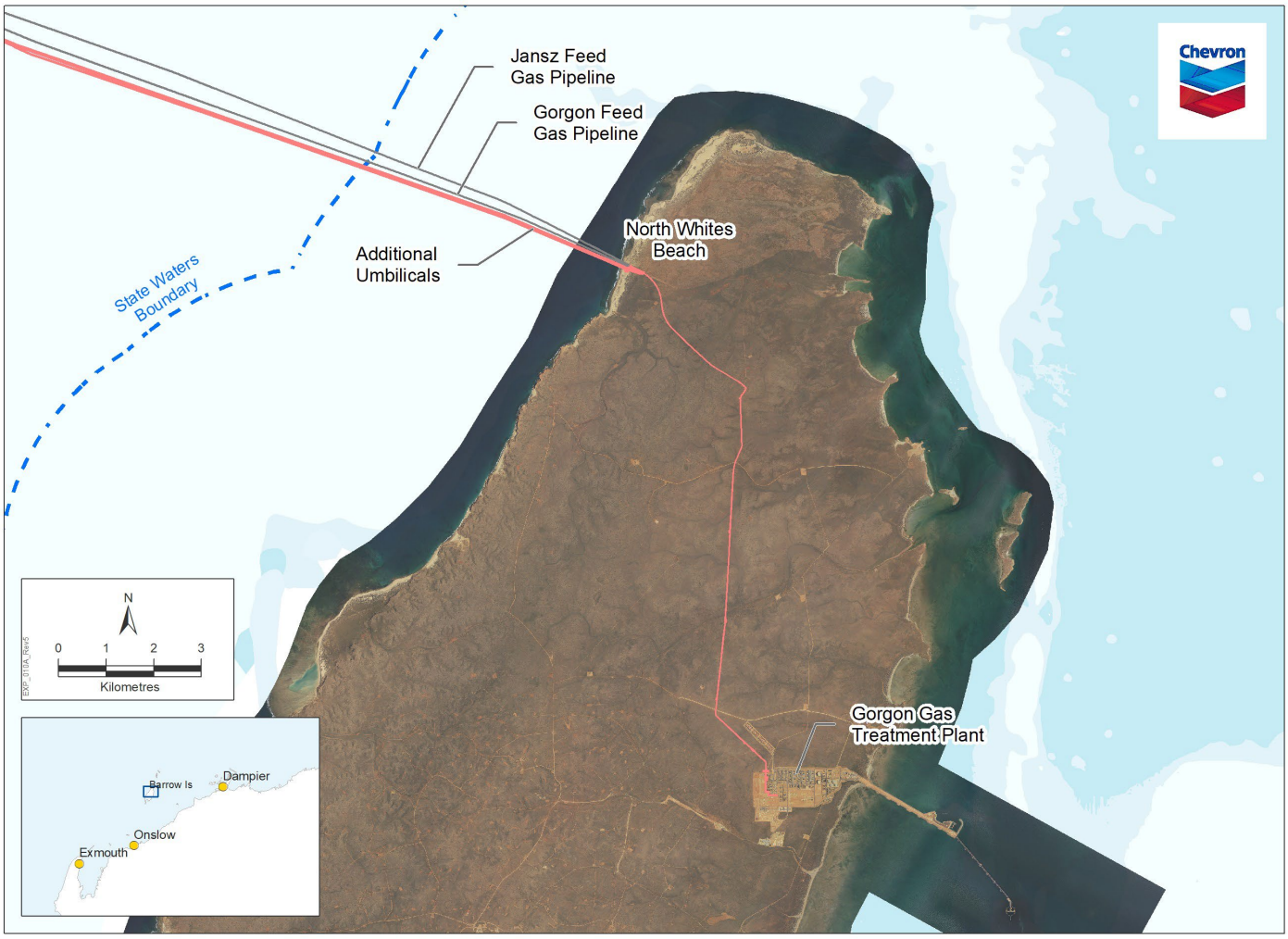


Figure 3: Jansz-Io Compression and Gorgon Umbilical Infrastructure Installation Map (Onshore and State Waters)

relevant persons information

jansz-io subsea compression installation

Chevron Australia, on behalf of the Gorgon Joint Venture, operates the Gorgon Project (Gorgon) in Western Australia.

Gorgon comprises offshore production wells and pipeline infrastructure that gathers natural gas from the Jansz-Io and Gorgon gas fields and transports it to a facility on Barrow Island for processing.

To maintain long-term gas supply to the facility, Chevron Australia plans to install a subsea compression station and associated infrastructure in the Jansz-Io gas fields, using proven subsea compression technology to enhance the recoverability of gas. The compression station includes two pumps and three compressors and will be placed on 'mud mats' on the seabed.

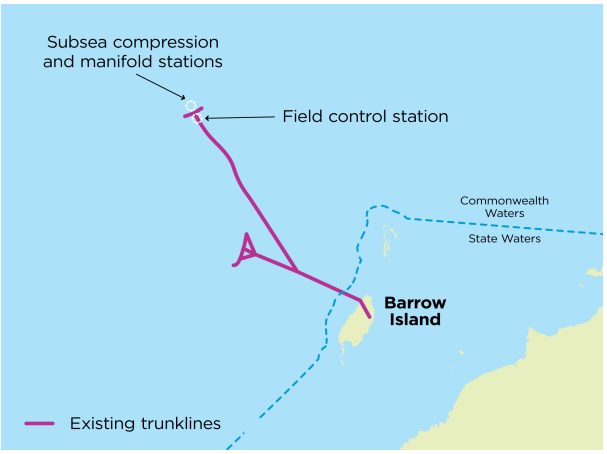
Chevron Australia is developing State and Commonwealth Environment Plans for the Jansz-Io Subsea Compression installation and welcomes feedback from relevant persons.

location and water depth

The Jansz-Io gas fields are located within production licences WA-36-L, WA-39-L and WA-40-L, approximately 200 kilometres off the northwest coast of Western Australia in water depths of approximately 1,350 metres.

Most installation activities will occur in this area as well as on Barrow Island and along the existing pipeline route between Barrow Island and the Jansz-Io fields in State and Commonwealth waters adjacent to the northwest coast of Barrow Island. Water depths in State waters are up to 25 metres, before dropping off at the Continental shelf to depths of 1,350 metres.

Table 1 shows the coordinates and Figures 2 and 3 show maps of the installation areas.



Jump to detailed maps below

schedule and duration

Jansz-Io subsea compression installation is scheduled to occur from mid-2024 to mid-2026.

Table 1 provides details on the timing.

activity summary

Activities include installing, pre-commissioning and commissioning of subsea compression infrastructure and a floating field control station.

Non-invasive surveys may be conducted before and after installation, including video and geophysical survey techniques. Helicopters and installation and support vessels will be used throughout the works.

Chevron Australia plans to install the following:

- Subsea structures, including a compression station, compression manifold station and associated foundations.
- A normally unattended, floating field control station anchored to the seabed by 12 mooring lines.
- An umbilical to supply power from Barrow Island to the field control station, and power cables, known as flying leads, from the field control station to the subsea compression station.
- Pipeline crossings and rock stabilisation as required.

The new umbilical will be installed adjacent to the existing offshore Gorgon and Jansz-Io feed gas pipelines. On Barrow Island, the umbilical will be installed in a trench in the approved right of way for existing infrastructure.

The shore crossing for the umbilical will be undertaken by horizontal directional drilling from a site to be established approximately 150 metres inland from North White's Beach, extending under the beach to approximately 550 metres offshore, to avoid disturbing foreshore vegetation and the nearshore marine environment.

Table 1 includes details on the infrastructure to be installed.

EMBA – environment that may be affected

Installation activities have planned environment interactions, known as 'aspects', which may cause environmental impacts or changes to the environment.

Unplanned releases and events may occur while conducting installation activities. Potential unplanned events are called environmental risks.

The size of the 'environment that may be affected', also known as an 'EMBA' is based on an emergency condition's worst case environmental scenario, which in this case is an unplanned spill event from a vessel collision.

The EMBA has been defined through combining 300 simulations of vessel collisions under different hydrological and meteorological conditions representative of summer, winter and transition seasons in the northwest. Figure 1 shows the EMBA.

Control measures to prevent this event are in place, but Chevron Australia is required to assess this highly unlikely scenario.

In this scenario, cultural, ecological and social values and sensitivities may be exposed to hydrocarbons. These are considered environmental risks because they are not planned to occur.

Table 2 lists potential environmental impacts, risks and control measures.

safe navigation area and marine exclusion zone

During installation of the infrastructure, notices to mariners will be sought to advise vessels to navigate with caution. A temporary 500-metre exclusion zone will be in place around vessels engaged in installation activities.

There is currently no exclusion zone over the existing infrastructure in the Gorgon and Jansz-Io gas fields.

Once installed, a 500-metre exclusion zone will be in place for the floating field control station, however, no other exclusion zones will be sought for the subsea infrastructure.

approvals process

In accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth), the installation of the Jansz-Io Compression subsea infrastructure in Commonwealth waters requires an Environment Plan to be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment and acceptance. These regulations require Chevron Australia to consult with relevant persons whose functions, interests and activities may be affected by the petroleum activity.

Installation activities in State waters and onshore will be addressed in an Environment Plan to be submitted to the Western Australian Department of Mines, Industry Regulation and Safety in accordance with the requirements of the Petroleum (Submerged Lands) (Environment) Regulations 2012 (WA) and the Petroleum Pipelines (Environment) Regulations 2012 (WA).

Both environment plans will describe the environment in which the installation activities are planned to take place, provide an assessment of the impacts and risks arising from the activities, and identify control measures to manage the potential impacts and risks to levels that are acceptable and as low as reasonably practicable.

The environment plans outline how Chevron Australia has engaged with 'relevant persons', whose interests, functions, and activities may be affected and how their feedback has been considered and addressed.

impacts, risks and proposed controls

A summary of impacts/risks and key proposed controls for installation activities can be viewed in Table 2.

your feedback

We are committed to engaging with Traditional Owners and Custodians, commercial fishers, recreational groups and other relevant individuals and organisations, as required by regulation.

We are seeking your feedback if you consider your **functions**, **interests** or **activities** may be affected based on the information outlined in table 2.

Let us know if you consider there are any control measures we could implement to eliminate, reduce or avoid an effect.

You can contact us tollfree at **1800 225 195** or leave feedback online below.

If a relevant person asks that their feedback be treated as confidential, Chevron Australia will make this known to NOPSEMA and the information will be kept confidential.

To begin providing feedback for **Jansz-io Compression Subsea Installation**, select a feedback category

what's next

Your feedback during the consultation period will be considered and incorporated into the environment plan.

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

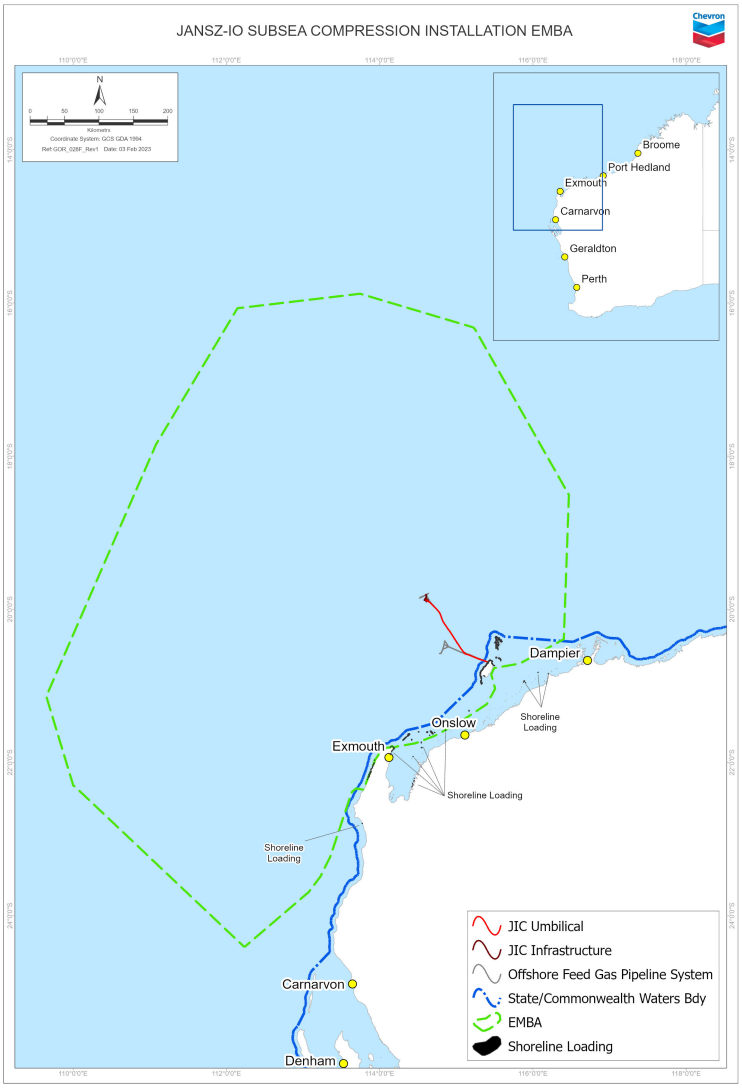


Figure 1: Jansz-Io Compression Infrastructure EMBA map.

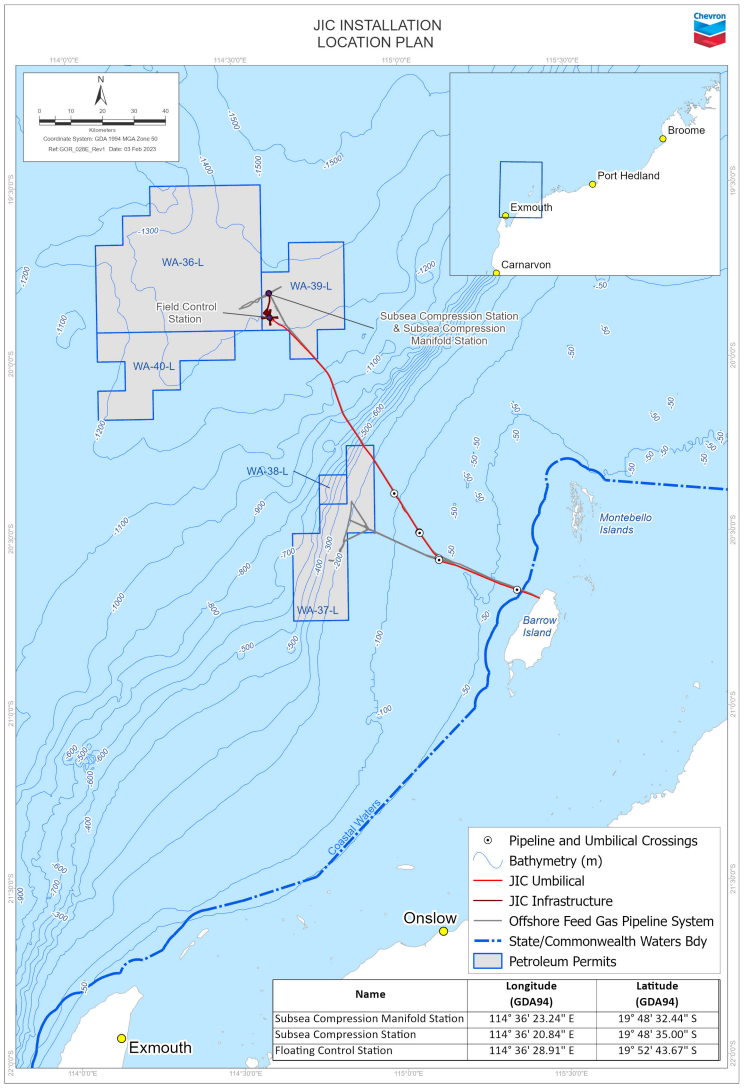


Figure 2: Jansz-Io Subsea Compression Infrastructure Installation Map

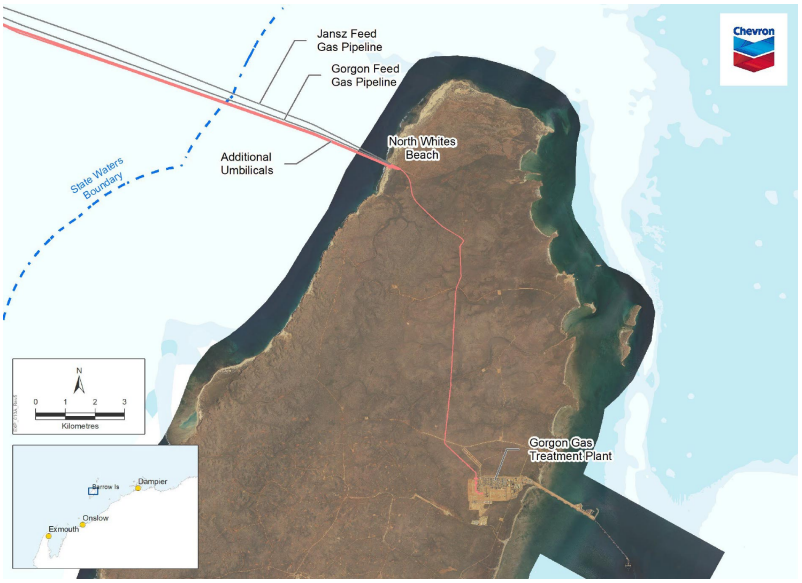


Figure 3: Jansz-Io Subsea Compression Infrastructure Installation Map (Onshore and State Waters)

Table 1: Jansz-Io Subsea Compression (J-IC) Infrastructure Details – view here

Table 2: Summary of impacts/risks and key proposed controls for installation activities – view here

resources

- Consultation in the course of preparing an environment plan – NOPSEMA
- Environment plan content requirements – NOPSEMA
- Environmental requirements – NOPSEMA
- Offshore Petroleum Greenhouse Gas Storage (Environment) Regulations
- NOPSEMA Assessment Process Environment Plans
- Chevron Operational Excellence Management System (OEMS)

(Material for Newspaper Notices)

environment plans

seeking relevant persons' input

Chevron has been part of Australian energy since 1952 and over the past 70 years we've changed as the world's energy needs have changed.

Chevron Australia Pty Ltd (Chevron Australia) is planning several offshore petroleum activities and wish to consult with people and organisations whose functions, interests or activities may be affected.

We will use feedback we receive from relevant persons to enhance the environment plans for the activities, which will need to be reviewed and accepted by Australia's offshore energy regulator NOPSEMA.

Below is a list of the activities that can help you identify if you are a relevant person:

Jansz-Io subsea compression. Installation of a subsea compression station and associated infrastructure about 200 km off the northwest coast of Western Australia in about 1,350 m of water. Planned for mid-2024 to mid-2026.

Gorgon umbilical. Works on a control and electrical umbilical between the existing facility on Barrow Island and Gorgon gas field 65 km northwest of the island in about 200 m of water. Planned for late 2023/early 2024 to mid-2024.

Wheatstone 4D-seismic survey. The use of sound energy to develop a high-quality image of geological features in the Wheatstone and Iago gas fields about 150 km northwest of Dampier in 80 to 1,140 m of water. Planned for late 2023/early 2024.

Dino South and Wheatstone Deep exploration wells. Drilling an exploration well, about 150 km northwest of Onslow in 954 m of water, and a second one about 175 km northwest of the Port of Dampier in about 220 m of water. Planned for 2023 to 2025.

Wheatstone well intervention and infill drilling. Drilling up to seven new wells and repairs, maintenance and data acquisition at nine existing production wells in the Wheatstone and Iago fields, about 165 km northwest of Western Australia in 118 to 229 m of water. Planned for 2024 to 2028.

Wheatstone-2 and Gorgon and Jansz wellhead decommissioning. Decommissioning five wellheads by leaving them in place. The first is about 174 km northwest of the Port of Dampier in 213 m of water. The second is about 70 km northwest of Barrow Island in 258 m of water. The last three are 130 to 150 km northwest of Barrow Island in 1,313 to 1,347 m of water.

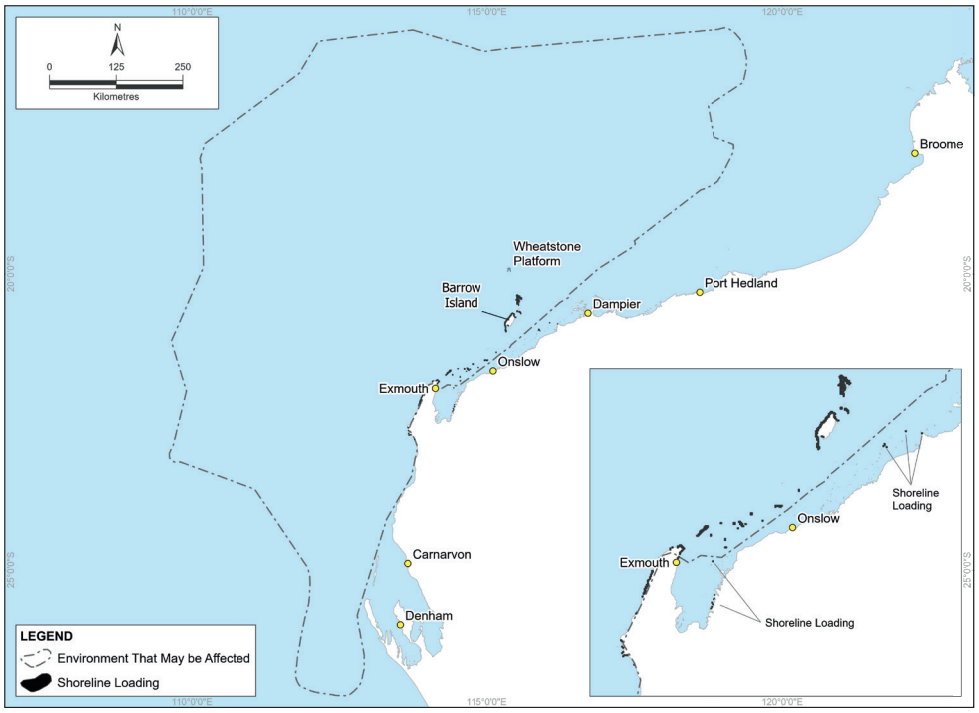
the environment that may be affected

We have assessed the planned impacts and unplanned risks from our proposed activities on the environment, including air and water quality, seabed habitat, marine fauna, and socioeconomic and cultural features.

The map shows a composite of the environments that may be affected by highly unlikely emergency conditions, including potential impacts to some shoreline from hydrocarbon loading. This is based on modelling for all the activities.

Chevron Australia has systematic control measures to prevent and mitigate emergencies and to reduce the impact of planned activities on the environment.

We are seeking your input on whether your functions, interests or activities may be affected within this area. These may include spiritual and cultural connection to land and sea country, commercial and recreational fishing, tourism, and local communities.



contact us

We are committed to meaningful consultation and providing information for people to make informed assessments. Please contact us by **Friday 10 March** to be included in consultations.

Visit **australia.chevron.com/feedback**, phone **1800 225 195** or use the **QR code** to provide feedback.

Chevron Australia Pty Ltd
(Chevron Australia)
ABN 29 086 197 757

(Chevron Australia LinkedIn post)

Chevron Australia · Following
19,376 followers
6mo

We are planning several offshore petroleum activities and wish to consult with people and organisations whose functions, interests or activities may be affected.

A list of activities and anticipated project dates that can help you identify if you are a relevant person can be accessed here > https://lnkd.in/gYkp-cxq

(Information session in Onslow)

[redacted]
Admin · March 2 ·

Chevron Environmental Plans Information Session –
Seeking Input on Offshore Petroleum Activities

Chevron invites the community of Onslow for a briefing on our proposed offshore petroleum activities.

We are seeking your input on whether your functions, interests or activities may be affected. These may include spiritual and cultural connection to land and sea country, commercial and recreational fishing, tourism, and local communities.

This is an opportunity to assist you to make an informed assessment on our activities. We will use feedback received to enhance the environment plans for the activities.

A list of the activities and the environment that may be affected is available here: https://bit.ly/3EOxlmn

To request more information, to arrange a meeting or to identify as a Relevant Person, please contact feedback@chevron.com

View insights 127 post reach

[redacted]
Admin · March 14 ·

Join Chevron tonight for a briefing on our proposed offshore petroleum activities.

We are seeking your input on whether your functions, interests or activities may be affected. We will use feedback received to enhance the environment plans for the activities.

Any queries, please email: feedback@chevron.com

View insights 111 post reach

From: Onslow Chamber of Commerce & Industry <secretary@onslowcci.com.au>
Sent: Monday, March 13, 2023 1:01 PM

View this email in your browser

OCCI ONSLOW CHAMBER OF COMMERCE & INDUSTRY

What's On

Chevron Seeks Input on Offshore Petroleum Activities

Date: Tuesday 14th March 2023
Time: 6:30pm
Venue: Onslow Sports Club

Chevron Australia invites the community of Onslow for a briefing on their proposed offshore petroleum activities.

They are seeking your input on whether your functions, interests or activities may be affected. These may include spiritual and cultural connection to land and sea country, commercial and recreational fishing, tourism, and local communities.

This is an opportunity to assist you to make an informed assessment on Chevron's activities. They will use feedback they receive to enhance the environment plans for the activities.

A list of the activities and the environment that may be affected is

appendix d summary of relevant persons consultation

Table D-1: Summary of relevant persons objections/claims and titleholder response

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	5/10/2022	CN-000536	Email	CAPL advised 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 advised that they welcome meaningful feedback.	No objection or claim raised.		
Apache Fishing Charters	4/05/2023	CN-000383	Email	CAPL advised the Apache Fishing Charters 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 the Apache Fishing Charters that they welcome meaningful feedback.	No objection or claim raised.		
Apache Fishing Charters	07/11/2023	OB-000910	Phone	Apache Fishing Charters stated that they never received notification of activities.	Engagement materials to be provided.	**Claim has merit:** CAPL acknowledge that further engagement is required.	No change made to the EP. CAPL resent the written notice.
Apache Fishing Charters	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Aquaculture Council of WA	10/01/2023	CN-000106	Email	CAPL advised the Aquaculture Council of Western Australia (ACWA) had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. ACWA would be pleased to meet with CAPL, and a meeting was organised.	No objection or claim raised.		
Aquaculture Council of WA	09/02/2023	OC-000296	Virtual Meeting	CAPL spoke with a representative from the ACWA to provide an overview of CAPL's new approach to consultation along with an update on CAPL's Environment Plans. CAPL were asked to present the same information to the ACWA board.	No objection or claim raised.		
Aquaculture Council of WA	21/04/2023	OC-000307	Face-to-face	CAPL presented on the current activities and consultation process to the ACWA board. ACWA mentioned various areas that their members may be interested and concerned about. The ACWA was appreciative of CAPL's approach and will revert back to CAPL with any questions they may have.	No objection or claim raised.		
Aquaculture Council of WA	01/05/2023	OC-000424	Email	CAPL thanked the ACWA for their support and engagement in the preparation of the Environment Plan. CAPL advised that if the ACWA had any objections or questions about the activity before CAPL submitted the Environment Plan to NOPSEMA, CAPL welcomed them. ACWA confirmed CAPL's activity information was presented at the board meeting and there were no concerns raised but noted there are some operators in the vicinity that may be relevant and asked what licences CAPL has engaged directly. CAPL confirmed they have engaged WAFIC and asked ACWA to identify additional contacts CAPL should contact.	No objection or claim raised.		
Aquaculture Council of WA	04/05/2023	OC-000455	Email	ACWA identified additional relevant persons CAPL should engage with regarding their Environment Plans. ACWA thanked CAPL for getting in touch. CAPL engaged with ACWA and acknowledged their intentions to contact the referenced relevant persons and thanked ACWA for their assistance. ACWA shared CAPLs written notice on the activity to Maxima Pearling on CAPL's behalf for introduction.	No objection or claim raised.		
Archipelago Adventures	04/05/2023	CN-000384	Email	CAPL advised the Archipelago Adventures 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 Archipelago Adventures that they welcome meaningful feedback.	No objection or claim raised.		
Archipelago Adventures	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Ashburton Anglers	05/10/2022	CN-000536	Email	CAPL advised Ashburton Anglers 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Ashburton Anglers	08/05/2023	CN-000400	Email	CAPL sent a formal written notification advising Ashburton Anglers 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 Ashburton Anglers that they welcome meaningful feedback.	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
Ashburton Anglers	07/11/2023	OC-000911	Phone	CAPL attempted to contact Ashburton Anglers via a number found online. A message was left, explained this was a follow up via phone regarding CAPL activities and informed Ashburton Anglers we would send a follow up email.	No objection or claim raised.		
Ashburton Anglers	23/11/2023	OC-000960	Email	CAPL sent a final close out email stating they have made several attempts to make contact via email / telephone regarding the opportunity to consult on our proposed activities. To date CAPL have not received a reply from the organisation. CAPL would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Australian Communications and Media Authority (ACMA)	05/10/2022	CN-000470	Email	CAPL advised ACMA 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Australian Communications and Media Authority (ACMA)	08/05/2023	CN-000402	Email	CAPL sent a formal written notification advising ACMA 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 ACMA that they welcome meaningful feedback.	No objection or claim raised.		
Australian Communications and Media Authority (ACMA)	15/05/2023	OB-000880	Email	ACMA provided a response, and raised the presence of subsea marine cables within the vicinity of CAPL Activities. ACMA encouraged Chevron Australia to engage with the operators of any submarine cables in the vicinity of its activities, and recommended contacting AHO. ACMA stated that they do not require any further information from Chevron Australia in relation to these activities at the current time.	1 AMCA raised the presence of subsea marine cables within the vicinity of CAPL Activities. 2 ACMA identified relevant organisations to contact, including AHO and cable operators.	**Claims have merit:** 1 The presence of subsea marine cables within the region should be considered within the EP. 2 The identified stakeholders have the potential to be impacted by CAPL activities on the North West Shelf, therefore it is reasonable and appropriate to conduct engagement.	Submarine cables are identified within Section 4.4.6 (Other marine and coastal industries) of the Description of the Environment. No submarine cables are present within the OA for the J-IC EP; the closest is ~18km to the north of the OA. AHO was engaged with. As no submarine cables are present within the OA, cable operators were not engaged with.
Australian Conservation Foundation (ACF)	31/03/2023	CN-000163	Email	CAPL used webform to request the contact email in order to supply Environment Plan information to the ACF. CAPL responded to the email sent by ACF and advised that the ACF 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 ACF that they welcome meaningful feedback	No objection or claim raised.		
Australian Conservation Foundation (ACF)	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Australian Council of Prawn Fisheries (ACPF) Ltd.	04/05/2023	CN-000388	Email	CAPL advised the ACPF 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 the ACPF that they welcome meaningful feedback.	No objection or claim raised.		
Australian Council of Prawn Fisheries (ACPF) Ltd.	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Australian Fisheries Management Authority (AFMA)	05/10/2022	CN-000271	Email	CAPL advised the AFMA 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 notified AFMA that they welcome meaningful feedback. AFMA confirmed receipt of email and had no specific comments on the proposed activity. AFMA advised that it is important to consult with all fisheries who have entitlements to fish within the proposed area.	No objection or claim raised.		
Australian Fisheries Management Authority (AFMA)	15/02/2023	CN-000214	Email	CAPL sent a formal written notification advising AFMA 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 AFMA that they welcome meaningful feedback.	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
				AFMA provided other relevant industry associations CAPL should consult with, CAPL confirmed they have been engaging with WAFIC closely and subsequently have reach out to the Northern Prawn Fishery and Commonwealth Fishery Association (CFA).			
Australian Fisheries Management Authority (AFMA)	07/07/2023-16/10/2023	OC-000906	Email	CAPL responded to AFMA and informed them they were consulting with WAFIC and Commonwealth fisheries on CAPL activities.	No objection or claim raised.		
Australian Hydrographic Office (AHO)	05/10/2022	CN-000272	Email	CAPL advised the AHO 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 notified the AHO that they welcome meaningful feedback. AHO acknowledged receipt of the information sheet and email. AHO notified CAPL that the information and data provided will be registered, assessed, prioritised and validated in preparation for updating Navigational Charting products.	No objection or claim raised.		
Australian Hydrographic Office (AHO)	08/05/2023	CN-000416	Email	CAPL sent a formal written notification advising AHO 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 the AHO that they welcome meaningful feedback. AHO acknowledged receipt of email and notified CAPL that the data supplied will now be registered, assessed, prioritised and validated in preparation for updating our Navigational Charting products.	No objection or claim raised.		
Australian Institute of Marine Science (AIMS)	05/10/2022	CN-000470	Email	CAPL advised AIMS 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Australian Institute of Marine Science (AIMS)	04/05/2023	CN-000387	Email	CAPL sent a formal written notification advising AIMS 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 AIMS that they welcome meaningful feedback.	No objection or claim raised.		
Australian Institute of Marine Science (AIMS)	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Australian Marine Conservation Society (AMCS)	10/02/2023	CN-000226	Email	CAPL advised the AMCS 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 the AMCS that they welcome meaningful feedback. CAPL followed up with AMCS to ensure they received the formal notification regarding CAPL's activity.	No objection or claim raised.		
Australian Marine Conservation Society (AMCS)	27/03/2023	OC-000160	Phone	CAPL called AMCS to confirm receipt of formal notifications for CAPL's Environment Plan and proposed activity. AMCS confirmed they will reach out to CAPL if they have any comments or concerns.	No objection or claim raised.		
Australian Marine Conservation Society (AMCS)	04/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Australian Marine Oil Spill Response Centre (AMOSC)	05/10/2022	CN-000536	Email	CAPL advised AMOSC 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Australian Marine Oil Spill Response Centre (AMOSC)	04/05/2023	CN-000385	Email	CAPL sent a formal written notification advising AMOSC 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 AMOSC that they welcome meaningful feedback.	No objection or claim raised.		
Australian Maritime Safety Authority (AMSA)	05/10/2022	CN-000470	Email	CAPL advised AMSA 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Australian Maritime Safety Authority (AMSA)	15/02/2023	CN-000537	Email	CAPL sent a formal written notification advising AMSA 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 AMSA that they welcome meaningful feedback.	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
				AMSA requested shapefiles for the CAPL activities to allow for AIS data analysis. CAPL provided the requested shapefiles.			
Australian Maritime Safety Authority (AMSA)	3/07/2023	OB-000718	Email	AMSA requested information from CAPL regarding their upcoming activities for data analysis. CAPL responded and sent through the requested information. AMSA thanked CAPL for the information and advised that their activities would take place within charted sipping fairways. AMSA requested details on how CAPL would mitigate the risk of collision with these areas. AMSA also advised CAPL of standard practice requirements regarding notification to Joint Rescue Coordination Centre for promulgation of radio-navigation warnings 24-48 hours before operations commence. The JRCC will need to be advised of when operations start and end. AMSA also notified CAPL that AHO should be contacted before operations commence to notify mariners. AMSA advised that all vessels exhibit appropriate lights and shapes to reflect the nature of operations – and comply with the International Rules for Preventing Collisions at Sea (COLREGs), in particular, the use of appropriate lights and shapes to reflect the nature of operations (e.g. restricted in the ability to maneuver). Vessels should also ensure their navigation status is set correctly in the ship's AIS unit.	AMSA raised the following: 1. Mitigation of risk of collision within charted shipping fairways 2. Requirement to notify JRCC before operations commence 3. Requirement to notify AHO before operations commence to notify mariners. 4. Lighting requirements comply with regulations	**Claims have merit:** All vessel collision, notification and lighting requirements are commonplace and industry standard. All claims are fair and reasonable for this offshore activity, and should be captured within the EP.	'Notifications to AMSA JRCC and AHO are included in EP (within 'maritime safety information' control measures and associated Environmental Performance Standards, and within ongoing notifications in Table 8-5). Based on AMSA correspondence, the existing control measures within the EP (Section 7.1 Physical presence - other marine users) have been modified to make specific reference to regulations (Marine Order 30, COLREG) for use of lights/sounds on vessels. Legislative controls (as per above on lights/signals) is considered sufficient to manage risks within shipping fairway.
Australian Maritime Safety Authority (AMSA)	14/07/2023	OB-000719	Email	CAPL responded to AMSA previous email regarding risk of collision mitigation measures: • Relevant persons engagement • Maritime safety information • Marine Standards • Managing Safe Work (MSW) process • Concurrent operations Plan. CAPL advised AMSA that they intended to notify AHO of operations. AMSA responded to CAPL thanking them for providing their mitigation measures. AMSA additionally stated that their main concern is where the activities occur within charted shipping fairways and that they would like to understand what the activities within the fairways entail, timeframe, specific risk mitigation for each activity. AMSA reiterated that these areas were higher risk due to the high density of shipping traffic. AMSA requested a Teams call to further discuss.	AMSA requested further details for planned activities within charted shipping fairways (such as timeframes and specific risk mitigation for each activity) in regards to collision risk.	**Claims have merit:** As a relevant person it is fair and reasonable for AMSA to request further information, and consultation is ongoing.	No change made to the EP.
Australian Maritime Safety Authority (AMSA)	27/09/2023	OC-000739	Email	CAPL responded to AMSA and enquired as to which activities concerned them so that CAPL may gather the correct people to further discuss in a call.	No objection or claim raised.		
Australian Maritime Safety Authority (AMSA)	24/10/2023	OB-000863	Email	AMSA's main concern is where activities occur within the charted shipping fairways. These areas are considered higher risk due to the higher density of shipping traffic. AMSA noted several activities will occur within the charted shipping fairways and requested further information around what the activities within the shipping fairways entail and over what time frame these activities would take place. AMSA also enquired about specific risk mitigation measures for these activities in higher-traffic areas. AMSA would like CAPL to provide further detail in an online meeting or in writing.	AMSA's main concern is where activities occur within the charted shipping fairways. AMSA requested further information around what the activities within the shipping fairways entail and over what time frame these activities would take place. AMSA also enquired about specific risk mitigation measures for these activities in higher-traffic areas. AMSA would like CAPL to provide further detail in an online meeting or in writing.	**Claims have merit:** All claims are fair and reasonable for this offshore activity, and require further engagement.	No change made to the EP.
Australian Maritime Safety Authority (AMSA)	02/11/2023-01/11/2023	OC-000884	Email	CAPL contacted AMSA to set up a time to meet and further discuss claims made by AMSA in previous correspondence.	No objection or claim raised.		
Australian Maritime Safety Authority (AMSA)	09/11/2023-09/11/2023	OC-000928	Virtual Meeting	CAPL spoke with representatives from AMSA to provide an overview of CAPL's Environment Plans, with a particular focus on the JIC Installation EP as the cable installation activity overlapped the shipping fairway. CAPL presented an overview of the cable installation activity, including scope, timing and duration.	No objection or claim raised.		
Australian Maritime Safety Authority (AMSA)	09/11/2023-13/11/2023	OB-000930	Email	AMSA raised the following questions during the virtual meeting on 9/11 relating to the JIC Installation activities: 1. Marine protocols for shipping channels crossing during cable lay activities. 2. Flag state of the cable lay vessel. AMSA clarified via email that it was after the following:	1 AMSA raised recommended controls, including: • notify AMSA's Joint Rescue Coordination Centre (JRCC)	**Claims have merit:** All claims are relevant for this offshore activity, and considered and (where applicable) captured within the EP.	Notifications to AMSA JRCC and AHO are included in EP (within 'maritime safety information' control measures and associated Environmental Performance Standards, and

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				• vessel procedures when another vessel is approaching, and there is a risk of collision. As well as general procedures for working in high-traffic areas. AMSA recommended that Chevron following the below controls to ensure navigational safety during the installation activity: • notify AMSA's Joint Rescue Coordination Centre (JRCC) • notify the Australian Hydrographic Office no less than four working weeks before operations commence for the promulgation of related notices to mariners. • remind vessels of their obligation to comply with the International Rules for Preventing Collisions at Sea (COLREGs), in particular, the use of appropriate lights and shapes to reflect the nature of operations (e.g. restricted in the ability to maneuver). Vessels should also ensure their navigation status is set correctly in the ship's AIS unit. AMSA further requested Chevron to evaluate and implement adequate anti-collision measures, which may include but are not limited to: • Additional warnings and/or lights to attract attention. • Offshore guard vessel/s that can monitor traffic, and take early action to alert a vessel approaching the area of operations.	• notify the Australian Hydrographic Office no less than four working weeks before operations commence for the promulgation of related notices to mariners. • remind vessels of their obligation to comply with the International Rules for Preventing Collisions at Sea (COLREGs), in particular, the use of appropriate lights and shapes to reflect the nature of operations (e.g. restricted in the ability to maneuver). Vessels should also ensure their navigation status is set correctly in the ship's AIS unit. 2. AMSA further requested Chevron to evaluate and implement adequate anti-collision measures, which may include but are not limited to: • Additional warnings and/or lights to attract attention. • Offshore guard vessel/s that can monitor traffic and take early action to alert a vessel approaching the area of operations.		within ongoing notifications in Table 8-5). Based on AMSA correspondence, the existing control measures within the EP (Section 7.1 Physical presence - other marine users) have been modified to make specific reference to regulations (Marine Order 30, COLREG) for use of lights/sounds on vessels. Legislative controls (as per above on lights/signals) is considered sufficient to manage risks within shipping fairway.
Australian Maritime Safety Authority (AMSA)	11/12/2023	OC-000993	Email	CAPL sent AMSA a follow up email addressing claims made during previous engagement, 9th November. CAPL advised to AMSA they were happy to provide further information in relation to the cable lay activities (JIC activity) if required.	No objection or claim raised.		
Australian Maritime Safety Authority (AMSA)	14/12/2023	OC-001026	Email	CAPL reached out regarding one of their response emails not delivering. AMSA responded and advised the representative had left AMSA and so the email was not valid. AMSA advised they would be in touch.	No objection or claim raised.		
Australian Maritime Safety Authority (AMSA)	19/01/2024-19/01/2024	OB-001094	Email	AMSA requested plans that outline action/s a cable laying vessel would take, if an approaching vessel fails to take action to avoid a collision. CAPL responded, stating that they would follow up on the request and revert back shortly.	Requested further information.	**Claim has merit:** A request for further information relating to vessel collision mitigation measures is considered fair and reasonable.	No change made to the EP.
Australian Maritime Safety Authority (AMSA)	12/02/2024	001111	Email	CAPL responded to AMSA query relating to action/s the cable lay vessel Aurora would take if an approaching vessel fails to take action to avoid a collision. CAPL noted the following actions: • The vessel is designed in accordance with the DNV NAUT AW which is provides for enhanced navigation in high traffic areas. In addition, the vessel meets COLREG requirements and will carry all required lights and markers to show reduced maneuverability according to rules. The vessels standard procedure is for bridge watch to monitor and set alarm limits in Electronic Chart Display and Information System (ECDIS) with regards to approaching vessels. • If there is an approaching vessel with a heading that indicates a possible breach of limits set in Notice to Mariners, the following actions would be applied: - Vessel will be hailed on VHF Channel 16 to request a change of course. - Nonresponsive units will be monitored and evasive action will be initiated on the Master's discretion with respect to speed and heading to avoid collision. However, any action will have due consideration to minimising risk of product damage, meaning that moving forward in an evasive heading at maximum lay speed would be a preferred action compared to an emergency cut of the cable product, depending on the actual approach of the other vessel. CAPL also noted that it will notify AHO and AMSA JRCC prior to the activity and a notice to mariners is to be issued with respect to a vessel with restricted maneuverability in the area.	No objection or claim raised.		
Australian Maritime Safety Authority (AMSA)	14/02/2024	001112	Email	AMSA noted CAPLs response to its query.	No objection or claim raised.		
Australian Southern Bluefin Tuna Industry Association (ASBTIA)	19/05/2022	OB-000071	Email	CAPL requested information as to who the correct person is to send information to at ASBTIA. ASBTIA requested that they be removed from the ongoing consultation due to them not having a direct interest in the location of the activity. ASBTIA expect that all activities are done in a responsible manner so as to prevent accidental discharge of hydrocarbons or chemicals into the	1. ASBTIA expect that all activities are done in a responsible manner so as to prevent accidental discharge of hydrocarbons or chemicals into the marine environment and	**Claims have merit:** The EMBA overlaps with the Southern Blue Tuna spawning area, and a spill event has the	No change made to the EP. The spawning area of Southern Blue Tuna is included in the EP in

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				marine environment and that any potential oil spill or loss of well control be appropriately and rapidly dealt with. ASBTIA Identified Tuna Australia as a potential relevant person.	that any potential oil spill or loss of well control be appropriately and rapidly dealt with 2. Identified Tuna Australia as a potential relevant person, on the basis that members/fishers in that association are potentially active on the North West shelf.	potential to impact this receptor. As such, this is considered a reasonable claim. 2. the identified stakeholder Tuna Australia has the potential to be impacted by CAPL activities on the North West Shelf, therefore it is reasonable and appropriate to conduct engagement.	Section 4.4.1.1, and considered as a receptor in Section 7. The additional stakeholders identified during consultation were engaged with.
Australian Southern Bluefin Tuna Industry Association (ASBTIA)	10/03/2023	CN-000404	Email	CAPL re-engaged ASBTIA with the updated and additional information regarding the activity and sought confirmation that ASBTIA would still like to be removed from the consultation list. No response was received.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	09/02/2023	CN-000321	Email	CAPL advised that the BAC 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 BAC that they welcome meaningful feedback.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	22/02/2023	OC-000323	Email	CAPL advised that they are interested in speaking to a representative of BAC about CAPL's activities.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	13/03/2023	OC-000322	Email	CAPL engaged with BAC to express their gratitude for BAC's continued partnership. CAPL also indicated intention to present to the Directors of Baiyungu, and asked for further information.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	15/03/2023	OC-000232	Email	CAPL and BAC organised a meeting for CAPL to present on the upcoming activities along with explore possible opportunities for the Traditional Owners in regards to ranger programs, protection areas and other programs that may have impacts on country. A meeting was organised.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	30/03/2023	OC-000245	Face-to-face	CAPL met with the BAC Board of Directors at Cardabia Station to present the details of CAPL's upcoming offshore activities and the identified risks and impacts. CAPL requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. BAC did not identify any additional relevant persons to consult. CAPL sought feedback on areas of significance and cultural values including sea country and underwater cultural heritage. Protecting land and sea country is a significant focus of the BAC and they are interested in collaborating with CAPL to protect it.	Protecting land and sea country is a significant focus of BAC and they are interested in collaborating with CAPL to protect it.	**Claim has merit:** Although not a specific claim or objective, the request for CAPL to further engage with BAC to identify collaboration opportunities has merit.	The EP was revised to include Table 4-15, which includes specific responses from First Nations consultation in regards to cultural values or features. Ongoing engagement with this stakeholder is taking place. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement.
Baiyungu Aboriginal Corporation	04/04/2023	OC-000242	Phone	BAC enquired if CAPL have engaged Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC), CAPL confirmed they met with the NTGAC Board in March and have a further meeting with NTGAC organised for September. CAPL reiterated their interest to meet with the Baiyungu board again and to maintain momentum on discussions.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	02/05/2023	OC-000357	Email	CAPL contacted BAC to confirm they have no specific objections and claims regarding the activity. CAPL reiterated with BAC that this has not just been a one-off engagement and CAPL are committed to ongoing consultation.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	09/05/2023	OC-000421	Phone	CAPL contacted BAC to confirm they have no specific objections and claims regarding the activity. BAC confirmed that there were no issues or objections with respect to the Environment Plan and look forward to ongoing consultations and discussions.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	10/05/2023	OB-000525	Email	CAPL advised BAC of the completion of the consultation timeframe regarding CAPL Environment Plans, and provided the following summary: • The Baiyungu coastal area, sea country, and adjacent islands are highly valuable to the Baiyungu people. Impact on these areas from a planned or unplanned event may cause harm to the cultural landscape, individuals, and the community.	BAC requests CAPL's continued engagement and support in relation to the Environment Plans and related activities to assist in properly performing its duties in advocating for and protecting rights and interests on Baiyungu country, including to inform emergency response planning.	**Claim has merit:** Although not a specific claim or objective, the request for CAPL to further engage with BAC on EPs to assist in performing its duties has merit given they are considered relevant to this Activity. In addition to this, the	Ongoing engagement with BAC is taking place. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been

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				Based on the current activity proposal, BAC, as representatives for the Baiyungu people has not expressed objections to the planned activities discussed in the consultation process. BAC requests CAPL to formalise continued engagement and support in relation to the Environment Plans and related activities to assist in properly performing its duties in advocating for and protecting rights and interests on Baiyungu country, including to inform emergency response planning. CAPL sent through a summary of engagements with BAC for confirmation. BAC advised CAPL that it is not their role to provide a formal response and advised CAPL to engage with NTGAC. CAPL explained that they are consulting with the NTGAC/YAC, and have erred on the side of caution by consulting with individual corporations in parallel to NTGAC to ensure that all relevant knowledge holders have the opportunity to participate. BAC indicated that there were additional angles for the BAC to consider. A meeting was arranged to discuss further.		consideration of how BAC can support / inform emergency response planning has merit.	added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement.
Baiyungu Aboriginal Corporation	21/06/2023	OC-000562	Virtual Meeting	CAPL met with BAC to discuss ongoing consulting and relationship, as well as introduction of the OPP. BAC advised that they support opportunities to continue to build the relationship between CAPL and BAC and were grateful for receipt of information on the Chevron Community Spirit Grant. BAC advised CAPL that it may wish to also engage with the DBCA who in partnership with Baiyungu people have joint management of the Ningaloo Coast. CAPL confirmed that DBCA has been consulted on the proposed activities. BAC supported CAPL approach of continuing to engage with NTGAC and BAC on Engagement Plan and OPP.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	7/08/2023	OC-000594	Email	CAPL extended solicitation of EOI for BAC to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with BAC further.	No objection or claim raised.		
Baiyungu Aboriginal Corporation	09/10/2023-09/10/2023	OC-000826	Email	BAC sent an invitation for CAPL to attend a BAC event in Fremantle.	No objection or claim raised.		
Baiyungu Aboriginal Corporation				To summarise consultation with BAC to date: • CAPL commenced consultation with BAC on 9th February 2023 with an introductory email and link to the Consultation Hub on CAPL's website • CAPL has met with BAC representatives in 2 face-to-face meetings and maintained contact through email and telephone correspondence. • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • CAPL has considered feedback provided by BAC during consultation, including information on BAC's functions, interests and activities within the EMBA and all claims raised have been addressed On 10th May 2023, CAPL emailed BAC with a summary of the outcomes of consultation undertaken to date. BAC has not raised any further objections or claims relating to the activity scope and as CAPL has provided a reasonable period and sufficient information to BAC 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 11A. CAPL will continue to engage BAC as part of its ongoing consultation as outlined in Section 8.3.4.1 of the EP			
Blue Horizon Charters	05/10/2022	CN-000536	Email	CAPL advised Blue Horizon Charters 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Blue Horizon Charters	04/05/2023	CN-000386	Email	CAPL sent a formal written notification advising Blue Horizon Charters advising 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 Blue Horizon Charters that they welcome meaningful feedback.	No objection or claim raised.		
Blue Horizon Charters	07/11/2023	OB-000912	Email	Blue Horizon Charters was not aware of CAPL activity overview email and asked for it to be resent.	Engagement materials to be provided.	**Claim has merit:** CAPL acknowledge that further engagement is required.	No change made to the EP. CAPL resent the written notice.
Blue Horizon Charters	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority	No objection or claim raised.		

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				(NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.			
Blue Juice Charters	05/10/2022	CN-000536	Email	CAPL advised Blue Juice Charters 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Blue Juice Charters	04/05/2023	CN-000389	Email	CAPL sent a formal written notification advising Blue Juice Charters advising 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 Blue Juice Charters that they welcome meaningful feedback.	No objection or claim raised.		
Blue Juice Charters	07/11/2023	OC-000913	Phone	CAPL called Blue Juice Charters in an attempt to engage, no answer or voicemail provided.	No objection or claim raised.		
Blue Juice Charters	23/11/2023	OC-000961	Email	CAPL sent a final close out email stating they have made several attempts to make contact via email / telephone regarding the opportunity to consult on our proposed activities. To date CAPL have not received a reply from the organisation. CAPL noted it would welcome the opportunity to engage for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Blue Lightning Fishing Charters	05/10/2022	CN-000536	Email	CAPL advised Blue Lightning Fishing Charters 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Blue Lightning Fishing Charters	04/05/2023	CN-000390	Email	CAPL sent a formal written notification advising Blue Lightning Fishing Charters advising 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 Blue Lightning Fishing Charters that they welcome meaningful feedback.	No objection or claim raised.		
Blue Lightning Fishing Charters	07/11/2023	OB-000914	Phone	CAPL called to close out consultation. Blue Lightning Fishing Charters was not aware of any emails and asked for the email to be resent.	Engagement materials to be provided.	**Claim has merit:** CAPL acknowledge that further engagement is required.	No change made to the EP. CAPL resent the written notice.
Blue Lightning Fishing Charters	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Bluesun2 Boat Charters	05/10/2022	CN-000536	Email	CAPL advised Bluesun 2 Boat Charters 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Bluesun2 Boat Charters	04/05/2023	CN-000391	Email	CAPL sent a formal written notification advising Bluesun2 Boat Charters advising 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 Bluesun2 Boat Charters that they welcome meaningful feedback.	No objection or claim raised.		
Bluesun2 Boat Charters	23/11/2023	OC-000961	Email	CAPL sent a final close out email stating they have made several attempts to make contact via email / telephone regarding the opportunity to consult on our proposed activities. To date CAPL have not received a reply from the organisation. CAPL would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Boating Industry Association WA	05/10/2022	CN-000470	Email	CAPL advised the Boating Industry Association WA 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Boating Industry Association WA	04/05/2023	CN-000392	Email	CAPL sent a formal written notification advising Boating Industry Association WA advising 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 Boating Industry Association WA that they welcome meaningful feedback.	No objection or claim raised.		
Boating Industry Association WA	07/11/2023	OB-000915	Phone	CAPL called to close out consultation. Boating Industry Association WA was not aware of any emails and asked for the email to be resent.	Engagement materials to be provided.	**Claim has merit:** CAPL acknowledge that further engagement is required.	No change made to the EP. CAPL resent the written notice.
Boating Industry Association WA	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under	No objection or claim raised.		

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				assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.			
BP	17/02/2023	CN-000209	Email	CAPL advised that BP 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 BP that they welcome meaningful feedback.	No objection or claim raised.		
BP	28/09/2023-03/10/2023	OC-000891	Email	BP requested all further engagements go through a different point of contact and provided an email. CAPL responded that they had updated the system. BP new point of contact identified themselves as the new focal point of consultation.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	07/09/2022	OC-000477	Phone	CAPL provided an initial conversation about the new Environment Plan consultation requirements. BTAC agreed to meet when CAPL had further information to share.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	05/10/2022	CN-000536	Email	CAPL advised BTAC 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 advised that they welcome meaningful feedback.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	11/11/2022-16/11/2022	OC-000478	Email	CAPL emailed BTAC an overview of their presentation about decommissioning and requested a meeting to discuss the upcoming activities in 2023. CAPL advised BTAC of the requirements for Environment Plan Consultation following the court case and the importance of the consultation approach. CAPL identified some of the new regulation requirements and informed BTAC of their four upcoming Environment Plans in the immediate future. CAPL informed BTAC of their intentions to have a focused conversation around visibility of the various projects which require consultation, discuss and agree on the method to apply and identify relevant persons, and how the consultation should occur. This ensures relevant people receive the information and have the opportunity to provide feedback. BTAC and CAPL discussed consultation date(s) for early 2023 to present the information in detail and define timeframe and methods of gathering feedback. CAPL indicated that they would take BTAC guidance on what the best forum to achieve these goals would be. BTAC responded and a meeting was organised.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	17/11/2022-23/12/2022	OC-000479	Email	BTAC provided CAPL with a report, and shapefiles on surveys undertaken on Barrow Island in June 2022. The email chain continues with CAPL requesting to set up two meetings with BTAC regarding confirmation of the cultural heritage work plan for 2023 and upcoming activities and the best way to develop a consultation plan with BTAC. CAPL representative thanked BTAC for the work they have accomplished together and expressed appreciation of the relationship they have developed. BTAC acknowledged the email and provides suggested meeting dates.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	13/12/2022	OC-000480	Face-to-face	CAPL met with BTAC to discuss cultural heritage planning for 2023. During the meeting CAPL raised the need to meet and develop a consultation approach for Environment Plans with BTAC. BTAC expressed concerns about the pressures the PBCs are under due to demands from the resource industry and how the requirements would strain the PBCs abilities. CAPL acknowledged the challenges and concerns of BTAC and informed them that CAPL does not mean to impose another process but sees this as an opportunity to work together to design a process to assist BTAC and CAPLs needs. CAPL had previously created a draft copy and timeline for consultation and invited BTAC to provide comments. BTAC expressed their positive experience with CAPL and requested to reconvene in January to delve deeper into this process. It was noted that CAPL would remain flexible, considering the expectations of BTAC and the Thalanyji community regarding the consultation. CAPL also expressed their willingness to present the project activities at a BTAC board meeting and engage with common law holders. CAPL offered to facilitate the community's input into the consultation process and provide an opportunity to provide feedback on the values and sensitivities within the proposed project areas.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	13/01/2023	OC-000249	Face-to-face	CAPL met with the Chair of the BTAC to present an overview of the consultation process for CAPL's upcoming offshore activities. CAPL sought feedback on areas of significance and cultural values including sea country and underwater cultural heritage. CAPL requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. BTAC provided details of other relevant persons in neighbouring PBCs.	BTAC identified local relevant persons for CAPL to consider engaging with.	**Claim has merit:** CAPL acknowledge the potential relevant people identified by BTAC and that engagement with these stakeholders is required.	No change made to the EP. The individuals provided by BTAC were Yinggarda, Malgana, Thalanyji and Baiyungu people. CAPL has engaged the PBCs that represent these groups and each PBC confirmed that it was appropriate to consult at PBC level and direct engagement with individuals was not required

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Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	15/01/2023	OC-001009	Face-to-face	CAPL met with BTAC CEO and discussed: • Resourcing • EP Stakeholder Consultation • Cultural Awareness Training CAPL requested a meeting to discuss consultation and for BTAC to consider how they want to structure consultation process and payment.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	16/01/2023	OC-001010	Email	BTAC emailed CAPL family details of other PBC's discussed in meeting on 13 January 2023	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	03/02/2023-21/02/2023	CN-000484	Email	CAPL provided BTAC with the formal 2023 written notice of the upcoming activities and provided a link to their website for further information regarding the activity. CAPL outlined the timeline of the consultation period and requested guidance on the next steps to ensure the right people received the information and are able to provide informed feedback. CAPL acknowledged the additional pressure this puts on BTAC and offered to assist monetarily for an independent environmental consultant to review the information for BTAC. CAPL also prepared to compensate Board sitting fees should BTAC prefer to meet CAPL representatives to discuss further. BTAC acknowledged receipt of CAPLs email and confirmed they would provide feedback soon. BTAC identified the extensive and ongoing engagement through this new process and offered to develop or enter into some form of "consultation agreement" regarding offshore proposals that might set out and define: • The matters potentially requiring consultation. • That BTAC is the recognised body and relevant to the matters; • That BTAC will define its key values and aspects it considers requires consultation regarding projects regulated by NOPSEMA • That CAPL would agree to consult on those matters; • A process for consultation; • Technical support to Thalanyji people • Cost recovery; • Administration • Etc. etc. CAPL responded with an affirmative approach and would welcome the opportunity to design the consultation process together. A discussion about timelines ensued in the email chain. CAPL also offered to present to the BTAC board about the upcoming activities. Both parties began drafting an agreement in parallel. BTAC asked how CAPL were engaging with other PBCs which CAPL answered.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	03/02/2023	OC-000481	Face-to-face	CAPL and BTAC held a meeting to discuss the environmental planning consultation requirements of the Commonwealth. During the meeting, CAPL provided an overview of the proposed activities and directed BTAC to CAPL's public website for detailed information, including project overviews, potential impacts, and risks. CAPL explained the process of identifying Relevant Persons and stated that BTAC had been identified as a Relevant Person. CAPL expressed their intentions to seek feedback from the Thalanyji community regarding any concerns related to the proposed projects, taking into account Thalanyji's values and sensitivities within and around the EMBA. CAPL advised that they aimed to work with BTAC to co-design the consultation process, without imposing a process on the PBC. The goal was to develop a consultation process that would meet the needs of both parties. BTAC identified themselves as a relevant person and committed to providing a written response to CAPL's request in the upcoming days.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	16/02/2023	OC-000979	Phone	CAPL provided BTAC with the opportunity to visit Barrow Island. BTAC discussed it will be raised as an agenda item during the next board meeting.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	20/02/2023	OC-000980	Email	BTAC sent CAPL minutes from phone meeting on the 16/02/2023.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	27/02/2023-10/03/2023	OB-000482	Email	BTAC responded to CAPL written notice regarding the 8 upcoming environment plans. BTACs letter requests further engagement with CAPL to understand the projects in order to protect Thalanyji interests, obtain a deeper understanding of the project, ensure management measure are	The Thalanyji people's deep connection to sea country north of Onslow, extending out into the East Islands off the coast of the	**Claim has merit:** Thalanyji Country is a distinctive bioregion. It spreads out across	Ongoing engagement with BTAC is taking place. A formal Engagement Plan is also being

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				in place and to involve BTAC members in ongoing monitoring and management of risks from the activities. BTAC informed CAPL of the Thalanyji people's deep connection to sea country north of Onslow, extending out into the east islands off the coast of the Pilbara including the Montebello Islands, Barrow Island and Mackerel Islands. 1. Values and definition and management: BTAC explained that they have not yet developed their values regarding Sea Country beyond their own culture and seek CAPL's assistance and support to develop anthropological and ethnographic team to define and articulate our values on Sea Country in a way that industry can understand. That way future management and protection of the values can be taken care of. 2. Information and understanding: BTAC are seeking support from CAPL to obtain appropriate independent technical support to review the proposals and provide BTAC and its members with feedback on the project risks to Sea Country and potential management controls that could be developed to protect their values and interests. 3. Emergency response planning and capability: BTAC acknowledge that there is still a risk with devastating impacts to the environment and values and sensitivities. BTAC acknowledges the importance of emergency responses are developed and locally provided to be able to respond to the potential actions that may impact their interests. BTAC also encourages CAPL and other industry to be active in BTACs ranger program and be participants in response planning and management activities. This would enhance the security of the Thalanyji people's interests. 4. Ongoing engagement, consultation and cost recovery: BTAC acknowledges the importance of ongoing consultation regarding offshore projects and the strain on their resources. BTAC proposes to enter into a consultation or engagement framework which ensures BTAC can be properly resources financially and intellectually to participate in the consultation and management planning processes for the activities. CAPL responded to BTACs letter and requested a meeting to go through the points raised to ensure BTACs values be respected and heard. CAPL recommended that the framework and plan be constructed in parallel with the current environmental approval consultation. CAPLs response to BTAC: Response to points raised in the letter: 1. Values Definition and Management CAPL supports the principles and see value in completing this work together. We envisage this could take some time and would occur in parallel with the current Environmental Approval consultation. 2. Information and Understanding CAPL can provide in-depth information on the proposed activities during a meeting. We are also open to funding BTAC to obtain appropriately qualified, independent technical support to review the planned activities and provide advice to BTAC and its members. 3. Emergency Response Planning and Capability Local Emergency response planning, capability and ongoing revalidation is a key safeguard within CAPL's environmental plans. We would be happy to discuss this in more detail during a meeting. Regarding BTAC's ranger program – CAPL acknowledges the value in developing ranger capability and active participation in response planning and management activities. 4. Ongoing Engagement, Consultation & Cost Recovery CAPL acknowledges the demand and pressure placed on BTAC, as a result of our work programs and the current regulatory environment. We agree with the concept of a consultation framework to ensure processes are clear and the right mechanisms are in place to support consultation. However, we are wary that having multiple agreements/instruments in place, may cause confusion. CAPL would like to work with BTAC on a practical approach to a consultation framework, which honours existing agreements.	Pilbara including the Montebello Islands, Barrow Island and Mackerel Islands. 1. Values and definition and management BTAC explained that they have not yet developed their values regarding Sea Country beyond their own culture and seek CAPL's assistance and support to develop anthropological and ethnographic team to define and articulate our values on Sea Country in a way that industry can understand. That way future management and protection of the values can be taken care of. 2. Information and understanding BTAC are seeking support from CAPL to obtain appropriate independent technical support to review the proposals and provide BTAC and its members with feedback on the project risks to Sea Country and potential management controls that could be developed to protect their values and interests. 3. Emergency response planning and capability BTAC acknowledge that there is still a risk with devastating impacts to the environment and values and sensitivities. BTAC acknowledges the importance of emergency responses are developed and locally provided to be able to respond to the potential actions that may impact their interests. BTAC also encourages CAPL and other industry to be active in BTACs ranger program and be participants in response planning and management activities. This would enhance the security of the Thalanyji people's interests. 4. Ongoing engagement, consultation and cost recovery BTAC acknowledges the importance of ongoing consultation regarding offshore projects and the strain on their resources. BTAC proposes to enter into a consultation or engagement framework which ensures BTAC can be properly resources financially and intellectually to participate in the consultation and management planning processes for the activities.	the Ashburton River coastal plain south to Tubridji Point and 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. Given BTAC's claim connection to Pilbara islands they are considered relevant. CAPL acknowledge the Thalanyji people's deep connection to sea country north of Onslow, extending out into the Bast Islands off the coast of the Pilbara including the Montebello Islands, Barrow Island and Mackerel Islands. Although not a specific claim or objective, this must be acknowledged and considered in the EP. (Per response to stakeholder) 1. Values Definition and Management CAPL supports the principles and see value in completing this work together. We envisage this could take some time and would occur in parallel with the current Environmental Approval consultation. 2. Information and Understanding CAPL can provide in-depth information on the proposed activities during a meeting. We are also open to funding BTAC to obtain appropriately qualified, independent technical support to review the planned activities and provide advice to BTAC and its members. 3. Emergency Response Planning and Capability Local Emergency response planning, capability and ongoing revalidation is a key safeguard within CAPL's environmental plans. We would be happy to discuss this in more detail during a meeting. Regarding BTAC's ranger program – CAPL acknowledges the value in developing ranger capability and active participation in response planning and management activities. 4. Ongoing Engagement, Consultation & Cost Recovery CAPL acknowledges the demand and pressure placed on BTAC, as a result of our work programs and the current regulatory environment. We agree with the concept of a consultation framework to ensure processes are clear and the right mechanisms are in	co-designed by CAPL and BTAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge sharing, and the type and frequency of interactions. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement.

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						place to support consultation. However, we are wary that having multiple agreements/instruments in place, may cause confusion. CAPL would like to work with BTAC on a practical approach to a consultation framework, which honours existing agreements.	
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	30/03/2023-03/04/2023	OC-000538	Email	Consultants to BTAC reached out to CAPL to discuss CAPL's upcoming activities and to organise a meeting.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	12/04/2023	OC-000483	Face-to-face	CAPL and consultants to BTAC -representing BTAC's interests, met up to discuss the next steps in relation to BTAC providing feedback on CAPLs Environment Plan consultation. BTAC requested the draft statements or principles specifically tailored to BTAC or the Thalanyji people and for a summary of consultation.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	13/04/2023-08/05/2023	OC-000486	Email	The new BTAC representative wrote a formal notice that they would be point of contact for BTAC. BTAC and CAPL discussed a number of matters including CAPLs consultation of environment plans for offshore activities consistent with NOPSEMAs guidelines. BTAC emailed a summary of the face to face discussed had on the 12th of April identifying that CAPL is open to: 1. Immediate consultation (underway) to inform environmental plans and NOPSEMA approvals to include in the first week of May and, 2. Ongoing engagement and consultation – including matters that fall outside of the existing Wheatstone agreement between BTAC and CAPL. BTAC will provide a formal response for the written notice soon. BTAC also requested any drafted consultation and engagement documents from CAPL. CAPL sent through the consultation guideline draft on the 24th of April to BTAC for review. CAPL informed BTAC that if they would like to provide comments or discuss any of the items let CAPL know. CAPL also re-informed BTAC of their intention to sit down and present / discuss with BTAC ongoing consultation framework and how they can support each other. CAPL requested some dates to set up a meeting. The Draft summary: • CAPL first engaged BTAC in November 2022, on the new Commonwealth Environmental Plan consultation requirements. CAPL shared the draft consultation process and timeline for feedback. CAPL had several subsequent conversations with BTAC staff and the BTAC Chair in January 2023, to understand their view on the new requirements, and requested the opportunity to co-design the consultation process. • On 3 February 2023, CAPL notified BTAC of the commencement of the consultation period and provided information on our upcoming offshore activities which may intersect with Thalanyji interests. The twelve-week consultation period is due to conclude on 5 May 2023. • A letter was sent to CAPL from BTAC on Monday 27 February confirming the Thalanyji community holds interests and values within the Environmental Area that might be affected (EMBA). The letter sought ongoing consultation with BTAC, and support by CAPL to that end, in relation to the above Environment Plans and related activities – and requested formalisation of ongoing consultation under a framework to be jointly developed and agreed. • CAPL provided a written response on 10 March 2023 that provided in-principle support for a consultation framework with BTAC. CAPL's response recommended that ongoing consultation under a formalised framework occur in parallel with immediate consultation specific to approval of proposed Environment Plans. • On the 3 March 2023, CAPL and BTAC met to further discuss the Commonwealth Environmental Plan consultation process. During the meeting, the parties discussed CAPL's approach to consultation where BTAC was again invited to provide input on the consultation method and timeline. CAPL representatives also provided an overview of where information can be found about the proposed activities, including the activities overview, risk, and impact assessments. Based on these discussions, CAPL understand that: • The Thalanyji coastal area, sea country, and adjacent islands are highly valuable to the Thalanyji people. Impact on these areas from a planned or unplanned event may cause harm to the cultural landscape, individuals, and the community. • BTAC requests CAPL to formalise continued engagement and support in relation to the Environment Plans and related activities to assist it properly perform its duties in advocating for	1. The Thalanyji coastal area, sea country, and adjacent islands are highly valuable to the Thalanyji people. Impact on these areas from a planned or unplanned event may cause harm to the cultural landscape, individuals, and the community. 2. BTAC requests CAPL to formalise continued engagement and support in relation to the Environment Plans and related activities to assist it properly perform its duties in advocating for and protecting rights and interests in Thalanyji country, including so emergency response plans are well informed. Subject to CAPL formalising ongoing engagement and consultation with BTAC about the proposed activities under an agreement within a reasonable timeframe, BTAC is agreeable in-principle to CAPL including this consultation summary in its Environment Plans. BTAC expects that CAPL will provide an annual update, or as otherwise requested, to the BTAC board or common law holders of CAPL's activities in the EMBA	**Claim has merit:** 1. Given BTAC's claim connection to Pilbara islands they are considered relevant. CAPL acknowledge the Thalanyji people's deep connection to sea country north of Onslow, extending out into the Bast Islands off the coast of the Pilbara including the Montebello Islands, Barrow Island and Mackerel Islands. Although not a specific claim or objective, this must be acknowledged and considered in the EP. 2. CAPL acknowledge BTAC's request formalise continued engagement and support in relation to the Environment Plans, and the expectation for annual updates. As a relevant person, this is reasonable and appropriate.	Ongoing engagement with BTAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and BTAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge sharing, and the type and frequency of interactions. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement.

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				and protecting rights and interests in Thalanyji country, including so emergency response plans are well informed. • Subject to CAPL formalising ongoing engagement and consultation with BTAC about the proposed activities under an agreement within a reasonable timeframe, BTAC is agreeable in-principle to CAPL including this consultation summary in its Environment Plans. BTAC expects that CAPL will provide an annual update, or as otherwise requested, to the BTAC board or common law holders of CAPL's activities in the EMBA. • BTAC can at any time make direct representations to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) about the nature of BTAC's interests and values and how they may be affected by CAPL's activities CAPL followed up with BTAC on the 4th of May to see if they had any further queries on the Draft plan CAPL sent through and to inform BTAC that they are working on the engagement plan and are interested in getting BTACs involvement. BTAC informed CAPL that they would provide some edits to the document and that they were very interested in working on the framework together for ongoing consultation. BTAC sent through their edits to the Draft consultation plan. CAPL acknowledged receipt of email and informed BTAC that they would review and send back with any additional comments.			
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	10/05/2023	OC-000589	Phone	BTAC contacted CAPL following email correspondence to discuss edits made to the document post review. CAPL confirmed they would send through a revised copy to BTAC.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	16/05/2023-18/05/2023	OC-000556	Email	CAPL reached out to BTAC to see if any further comments were received regarding the Draft plan. BTAC sent through an updated version of the plan and stated that BTACs position is agreeable in-principle to this consultation summary on the understanding that Chevron intends to formalise ongoing consultation and engagement at some point in the near future. CAPL thanked BTAC for the update and inquired if BTAC had any time to discuss and work on the engagement plan together. BTAC responded affirmatively and informed that the engagement plan would need to be endorsed by the CEO and reflect the position conveyed by BTAC to date. A meeting was organised to meet and discuss further. CAPL provided BTAC with the Draft Engagement Plan and the EP Consultation Statement for review.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	19/05/2023	OC-000985	Face-to-face	CAPL met with BTAC for monthly breakfast meeting. CAPL reminded BTAC about the EP progress and asked BTAC to raise any objections or claims.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	24/05/2023	OC-000555	Face-to-face	CAPL met with BTAC to finalise BTAC's formal response to consultation. BTAC agreed to suggested changes by CAPL and requested a final copy. The engagement plan was discussed for ongoing consultation and interactions between CAPL and BTAC.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	26/05/2023	OC-001030	Email	CAPL provided final copy of Consultation draft summary and statements agreed upon in meeting between RFF/BTAC and Chevron on 24 May 2023. CAPL provided a copy of the draft engagement plan.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	07/06/2023	OC-001014	Email	CAPL sent through Underwater Cultural heritage plan to BTAC and advised they would be interested in working with BTAC on this. BTAC confirmed receipt of information regarding UCH on EP	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	08/06/2023	OC-001013	Email	CAPL emailed BTAC with consultation summary and draft engagement plan. CAPL requested opportunity to work through engagement plan.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	26/05/2023-08/06/2023	OC-000588	Email	CAPL emailed BTAC a summary of the actions from their face-to-face meeting on the 24th of May 2023. CAPL sent through the Draft engagement plan and the EP consultation Statement. The engagement plan is a draft outline of how BTAC and CAPL can map out engagements going forward while still enabling iteration and improvement over time. CAPL informed BTAC that they look forward to working with BTAC and the team further. CAPL also mentioned the Northern Seed initiative being actioned by CAPL and their intent to include BTAC in its progress.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	03/07/2023-04/07/2023	OB-000579	Email	BTAC reviewed the consultation document and accepted the minor changes they also noted the engagement plan is a useful starting point but requires a bit more work and sent through their edits with the main points addressed below: BTAC thanked CAPL for consulting about their upcoming activities and acknowledged the plans sit outside the Wheatstone agreement. A key issue for BTAC is to ensure that it's not negatively impacted in assisting CAPL with consultation. BTAC reframed the background and objectives, and addressed their key issues and comments:	Concerns raised about ongoing engagement and the formalised engagement plan.	**Claim has merit:** CAPL acknowledge BTAC's concerns for continued engagement. As a relevant person, this is reasonable and appropriate.	Ongoing engagement with BTAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and BTAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge

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				• Current draft generally reads as though it's intended that EP consultation is largely undertaken as an adjunct to existing engagement for the Wheatstone agreement. • BTAC understands that meaningful consultation redevelopment/revision/implementation of EPs for multiple projects is likely to require significantly more airtime/bandwidth from BTAC. • The engagement plan should ensure that there are relatively clear swim lanes between Wheatstone agreement implementation and NOPSEMA/EP consultations - with appropriate resourcing for the latter. • NOPSEMA consultations are currently outside of Wheatstone agreement. Likely more appropriate that NOPSEMA consultations are undertaken in bespoke forums (rather than adding to Wheatstone Project Committee). • Matters in current draft engagement plan seem like business-as-usual activities that would be undertaken irrespective of NOPSEMA consultation. • Engagement plan needs to be more specifically tied to consultation/implementation re Environment Plans and resourced accordingly. • Once the engagement plan is settled then it – together with resourcing for BTAC – will need to be formalised under an agreement. The BTAC representative proposed to forward a simple letter to formalise BTCs progressing meaning consultation with CAPL in relation to activities under environment plans. CAPL responded to the email and informed BTAC they would review the document and comments in preparation for the next meeting.			sharing, and the type and frequency of interactions. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement.
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	06/07/2023	OC-000978	Email	BTAC sent CAPL a letter thanking CAPL for the invitation to visit Barrow Island and that the senior BTAC executive team were interested in attending the trip.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	13/07/2023-13/07/2023	OC-000582	Email	BTAC followed up with CAPL by email following the morning meeting outlining the take away actions for BTAC. • BTAC to forward standard HPA • BTAC to forward negotiation protocol. We're currently settling a Costs Acceptance Letter internally and will forward this to you in near future. • BTAC to re-check with board regarding Elders for forthcoming trip to Barrow Island to discuss WA Oil decommissioning (i.e. it is for on-country engagement purposes, not a heritage survey). • BTAC to provide further comment on latest draft engagement plan received yesterday. • CAPL to forward schedule of proposed forward activities (2-year horizon) on country / seeking input or engagement. CAPL responded with their own actions and agreed outcomes. • continue to work on engagement plan • Cultural Heritage Agreement for Barrow Island • Underwater Cultural Heritage • Northern Seed initiative • Turtle Monitoring on BWI Both organisations were happy to discuss and continue engagement.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	13/07/2023	OC-000581	Face-to-face	CAPL met with BTAC to continue discussions around EP consultations and OPP, and progress latest version of the engagement plan.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	07/08/2023-07/08/2023	OC-000603	Email	CAPL extended solicitation of EOI for BTAC to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with BTAC further.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	15/08/2023-15/08/2023	OC-000618	Email	CAPL and BTAC discussion relating to ongoing consultation. CAPL advised BTAC that it was still waiting for feedback from BTAC on comments on version 3 of the engagement plan. CAPL advised of desire to be involved in sea country ethnographic project and BTAC confirmed requirement for agreement to be in place.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	15/08/2023-15/08/2023	OC-000619	Phone	CAPL and BTAC had discussion to clarify aspects of the draft Engagement plan. CAPL reiterated support to stand up a group within BTAC to handle consultations with a view that they develop fluency around engagements. BTAC advised that there were some minor changes that they will be sharing via email and that they were happy with the progress being made.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	25/08/2023	OC-000974	Face-to-face	CAPL met with BTAC for monthly breakfast meeting. CAPL reminded BTAC about the EP progress and asked BTAC to raise any objections or claims.	No objection or claim raised.		

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Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	30/08/2023	OC-000975	Face-to-face	CAPL met with new BTAC CEO to discuss EP consultation process.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	04/09/2023-04/09/2023	OC-000634	Email	CAPL contacted BTAC via email to follow up on endorsement of draft engagement plan.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	10/10/2023-10/10/2023	OC-000825	Email	CAPL provided BTAC with a signed acceptance of their cost recovery budget for consultations.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	04/12/2023	OB-000976	Phone	BTAC contacted CAPL to express concerns that BTAC have not be properly consulted on the EP's. CAPL assured BTAC that CAPL have been consulting with BTAC since November 2022 on the EP's and have provided BTAC with all relative information on EP activities and have asked BTAC on multiple occasions to meet with the BTAC Board of Directors and Elders council. CAPL also offered to facilitate a briefing session later in the week to discuss consultation process and progress.	Raised concern about not being properly consulted on the EPs.	**Claims have merit:** As a relevant person, CAPL acknowledges the concerns raised.	No change made to the EP. A response to the objection and claims raised was provided. Ongoing engagement with BTAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and BTAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge sharing, and the type and frequency of interactions.
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	04/12/2023	OC-000977	Email	CAPL sent BTAC the letter previously sent by BTAC to CAPL on approved summary of consultation for CAPL EP's. CAPL also offered the opportunity to discuss the planned activities within the EPs.	No objection or claim raised		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	05/12/2023	OB-000981	Email	BTAC sent CAPL a written summary letter of concerns that BTAC have not be properly consulted on EP activities to date. BTAC invited CAPL to present at Board meeting in January 2024 to discuss the following: • provide an overview of activities the subject of EPs to be submitted to NOPSEMA, • discuss risks associated with those activities and mitigation measures, • outline proposed future consultation (i.e. the engagement plan), and if possible, settle the engagement plan and framework agreement or – at a minimum if a draft agreement is not in place by then – for Chevron to outline proposed key terms for such an agreement.	Raised concern about quality of consultation, requested further information regarding activities, risks and mitigation measures, and raised the need to finalise engagement plan.	**Claims have merit:** As a relevant person, CAPL acknowledges the concerns raised.	No change made to the EP. A response to the objection and claims raised was provided. Ongoing engagement with BTAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and BTAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge sharing, and the type and frequency of interactions.
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	07/12/2023-07/12/2023	OC-000983	Face-to-face	CAPL met with BTAC to discuss finalisation of overarching relationship (engagement plan) agreement. This will include formalising social benefits, resourcing and the implementation of a Cultural Mapping Program. CAPL provided an update on progress for procedure development for Underwater Cultural Heritage. BTAC requested CAPL present at January board meeting to update on progress of offshore activities and submitted Environment Plans. BTAC confirmed that there were no concerns in regards to the Environment Plans submitted.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	08/12/2023-08/12/2023	OC-000987	Email	CAPL provided a refreshed consultation summary to BTAC for review.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	11/12/2023-11/12/2023	OC-001005	Phone	CAPL contacted BTAC to confirm BTAC has had more consultation time than any other stakeholder (14 months) and is yet to come back with any substantive comments around the planned activities. CAPL confirmed with BTAC that it would be re-submitting EP to NOPSEMA this week. CAPL advised that consultation with BTAC, as guided by RFF, has focused purely on the engagement plan despite numerous offers by Chevron to visit Barrow Island, present to the Board or to members during the past 14 months. CAPL confirmed that it was happy to present to the BTAC Board in January 2024 on our next lot of planned activities, and to the Feb Common Law Holders meeting. CAPL reiterated that it is happy to provide support to BTAC to be able to help understand its planned activities.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	11/12/2023-11/12/2023	OC-001007	Email	BTAC via their Consultants provided comments to updated consultation summary to reflect additional steps since initial consultation summary was co-designed and agreed in May 2023. BTAC via their Consultants also provided Land Access Heritage Agreement Template.	No objection or claim raised.		

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Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	12/12/2023-12/12/2023	OC-001006	Email	CAPL provided BTAC with an updated consultation response and statements from the original consultation summary co-designed with BTAC at the close of consultation in May 2023.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	15/12/2023	OC-001017	Email	CAPL provided detailed summary of consultation and engagements between 2022 and 2023 to BTAC via email.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	15/12/2023-15/12/2023	OC-001008	Phone	CAPL followed up with BTAC by phone to discuss 12 December correspondence. BTAC advised that they will formally respond to CAPL email by COB 15 December 2023.	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	17/12/2023	OB-001020	Email	BTAC responded to CAPL letter. BTAC thanked CAPL for draft engagement agreement. BTAC stated that they have limited resources, and in order to undertake effective consultation, two matters must be satisfied: 1. Consultation must satisfy the requirements of Regulation 11A as explained in Santos NA Barossa Pty Ltd v Tipakalippa. 2. BTAC's members and other Native Title holders need sufficient and timely information in relation to the proposals in the EPs. In order for BTAC to inform itself, members and other title holders adequately and impartially, BTAC need to obtain advice in relations to: a. the technical information in relation to the EP; b. the assessment of the potential environmental implications of the proposal as contained in the EP; c. an assessment of the potential impact of the proposal on the cultural heritage and rights and interest under traditional law and custom as well as any rights and interests arising from contemporary sources of our members and native title holders. BTAC set out an action plan to provide feedback and meet the requirements noted above: 1. Finalise engagement plan 2. BTAC will provide the opportunity for CAPL to present at January board meeting. BTAC will also in the meantime obtain a quote from an independent environment expert to review the EPs and the technical information, and a quote from an independent expert for a substantive assessment of underwater cultural heritage. BTAC will seek your consent to the independent expert's fees before engaging experts. 3. Subject to receiving the advice from the independent experts, BTAC will disseminate the information, including the expert's reports, to its members and common law holders with a view of discussing this matter at the next available meeting. Following satisfactory completion of the above steps, BTAC will provide the resultant commentary to Chevron for incorporation into its EPs. BTAC request that this engagement be included in the EP submission; and provide BTAC a copy of your submission to NOPSEMA for BTAC's record.	Raised concern about quality of consultation, raised need for technical advice and support, and raised the need to finalise engagement plan. BTAC request that this engagement be included in the EP submission and provide BTAC a copy of your submission to NOPSEMA for BTAC's record.	**Claims have merit:** As a relevant person, CAPL acknowledges the objection and claims raised.	No change made to the EP. A response to the objection and claims raised will be provided to BTAC through ongoing engagement. A further meeting has been planned with BTAC for this purpose. CAPL will provide a copy of the latest revision of the EP, as submitted to NOPSEMA. A formal Engagement Plan is also being co-designed by CAPL and BTAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge sharing, and the type and frequency of interactions.
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	18/12/2023	OC-001029	Phone	CAPL contacted BTAC to discuss comments in letter 17 December 2023 and set a time to meet in the week commencing 18 December 2023 to plan for meetings in January 2024. Meeting confirmed for 9am 19 December 2023	No objection or claim raised.		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	19/12/2023	OC-001039	Meeting	CAPL met with BTAC and noted the following: • CAPL reiterated the NOPSEMA Environment Plan process to BTAC. CAPL confirmed that following consultation period in early 2023, the EP was submitted to NOPSEMA. • In reference to BTAC letter received on 17 December, CAPL advised that the reason why conversations since June had been focused on the development of an engagement plan between CAPL and BTAC was because we had closed consultation and co-developed a consultation summary with BTAC to include in the submitted EP in May. • BTAC expressed their appreciation for CAPL being proactive and driving the development of the engagement plan well in advance of other operators. • CAPL confirmed support for an independent environmental specialist to review activity information sheets, not the EP. • BTAC thanked CAPL for providing the draft consultation/framework agreement and advised it was reviewing it. CAPL expressed that it was important for it to demonstrate that CAPL was compensating people fairly for their time and input into the development of environment plans. • BTAC expressed an interest in CAPL presenting information on current activities at the January Board Meeting. • CAPL accepted invitation to present to BTAC board in January 2024 but requested to use this as an opportunity to get the input of the BTAC board and introduce the opportunity to work with the board to co-design ongoing consultation.	BTAC expressed interest in CAPL presenting at its board meeting and finalising the engagement agreement.	**Claim has merit.** As a relevant person CAPL acknowledges BTAC's claim.	No changes made to the EP. CAPL will continue to consult BTAC as per its request in accordance with CAPL's ongoing consultation arrangements.

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				• CAPL requested that there be a separate 1/2 day workshop with the board before or after their February 2024 board meeting focused on designing on-going consultation. • BTAC via their consultants requested that board meeting be used to finalise the engagement agreement. CAPL advised that it would like for the board to be involved in designing the agreement for how BTAC and CAPL work together in addition to future consultation. • BTAC advised that it would be the board, rather than a separate working group, that would be responsible for future consultations. • CAPL expressed desire to work with BTAC to help develop fluency around its work so that BTAC was in a better position to understand and contribute to the enhancement of environment plans in the future. BTAC to confirm times and locations for meetings in January and February.			
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	19/12/2023	OC-001040	Email	BTAC sent an email follow up after meeting CAPL confirming: • BTAC will provide comments to CAPL on the draft Framework Agreement, to be re-badged as a Relationship Agreement. • BTAC and Chevron can settle the Relationship Agreement in-principle in advance of BTAC's January board meeting (likely to be around 18 January). The Relationship Agreement will also append and formalise the Engagement Plan so there is clarity on the steps in the process • BTAC will seek the board's endorsement of the Relationship Agreement (and Engagement Plan), with the aim that substantive consultation commences from that point onwards. • CAPL should present to the board in February 2024, instead of January 2024, once the Relationship Agreement has been settled. • By this time, an environmental consultant should be engaged to review the EPs and provide the independent advice to BTAC's board, to assist meaningful engagement. Subject to confirmation by the board, CAPL will be invited to present to the common law holders at the next meeting.	BTAC confirmed interest in CAPL presenting at its board meeting, finalising the relationship agreement and engaging an environmental consultant to provide independent advice	**Claim has merit.** As a relevant person CAPL acknowledges BTAC's claim.	No changes made to the EP. CAPL will continue to consult BTAC as per its request in accordance with CAPL's ongoing consultation arrangements.
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	21/12/2023	OC-001042	Email	CAPL responded to BTAC's email and noted: • Appreciation for the meeting on 19 December 2023 and the opportunity to provide clarification on the consultation process and confirm the close of consultation with BTAC in May 2023 before our EP's were submitted to NOPSEMA in June. • Support for BTAC to engage an independent environment specialist to review future information sheets and a cultural mapping program to continue enhancing CAPL's EPs in future • The opportunity to present to the board in February 2024 to provide a summary of existing and proposed future activities	No objection or claim raised		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	22/12/2023-22/12/2023	OC-001043	Phone	CAPL contacted BTAC by phone to discuss plan to meet in preparation for the board meeting in January and February.	No objection or claim raised		
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)				To summarise consultation with BTAC to date: • CAPL commenced consultation and discussions relating to the EP with BTAC on 7th September 2022. Information sheets were provided at this time. • CAPL provided BTAC with an introductory email and link to the Consultation Hub on CAPL's website on 3 February 2023 • CAPL has met with BTAC representatives in 6 face-to-face meetings and maintained contact through email and telephone correspondence. • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • CAPL has considered feedback provided by BTAC during consultation, including information on BTAC's functions, interests and activities within the EMBA and all claims raised have been addressed in the EP as outlined above • On 16th May, BTAC emailed CAPL with a summary of the outcomes of consultation undertaken to date to close consultation. BTAC had a period of over three months for consultation, which is CAPL maintains is a reasonable period consistent with section 6.2.3 of the EP. • On 4th December, BTAC contacted CAPL to express concerns that BTAC have not been properly consulted on the EP's. CAPL responded with a detailed summary of consultation and engagements between 2022 and 2023 to BTAC and also met with BTAC on 19 December 2023 to assert CAPL has provided a reasonable period and sufficient information. • CAPL co-designed consultation with BTAC, BTAC requested the consultation be undertaken through its consultants, and Chevron undertook the consultation in accordance with that co-			

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				designed method for 2023. In 2023 Chevron made repeated offers to brief the Board and/or Common Law Holders and BTAC did not take up those invitations. If BTAC now wishes the consultation to occur differently in 2024, CAPL and BTAC can co-design consultation for 2024, but it is CAPLs view that such change in methodology does not render the 2023 consultation incomplete or invalid. • CAPL has provided a reasonable period and sufficient information to BTAC to make an informed assessment of the possible consequences of the activity on its functions, interests and activities because CAPL has allowed a 3-month period for consultation and provided written and verbal information on the activity, the risks and impacts of the activity, and the EMBA. CAPL asserts it has discharged its obligations under regulation 11A. CAPL will continue to engage BTAC as part of its ongoing consultation, including progressing cultural mapping, as outlined in Section 8.3.4.1 of the EP			
Cape Conservation Group	10/02/2023	CN-000158	Email	CAPL advised the Cape Conservation Group 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 Cape Conservation Group that they welcome meaningful feedback.	No objection or claim raised.		
Cape Conservation Group	17/02/2023	OC-000306	Phone	CAPL spoke with Cape Conservation Group about CAPL's want to engage with them in Exmouth and discuss preferred methods of communication. Cape Conservation group confirmed they would share CAPL's details.	No objection or claim raised.		
Cape Conservation Group	11/05/2023	OC-000527	Email	CAPL reached out to the Cape Conservation Group to see if they had any feedback on the activity and confirmed that the Cape Conservation Group has not expressed specific concerns or objections to the planned activity. The Cape Conservation Group advised CAPL of their views, expressed their concern of CAPL's activities regarding fossil fuel extraction and global scientific advice, and informed CAPL of their decision not to participate in the consultation process. CAPL responded to Cape Conservation Group acknowledging their views and that CAPL will be happy to arrange a meeting to discuss CAPL's activities at any time.	Broad objection to continued extraction of oil and gas resources	**Claim has merit:** Although not a specific claim or objective, the project does support oil and gas activities, and Cape Conservation Group are entitled to express their opinion as a relevant person.	No change made to the EP.
Cape Immersion Tours	20/02/2023	CN-000208	Email	CAPL advised that Cape Immersion Tours 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 Cape Immersion Tours that they welcome meaningful feedback.	No objection or claim raised.		
Cape Immersion Tours	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Cape Immersion Tours	07/11/2023	OB-000916	Phone	CAPL called to close out consultation. Cape Immersion Tours was not aware of any emails and asked for the email to be resent.	Engagement materials to be provided.	**Claim has merit:** CAPL acknowledge that further engagement is required.	No change made to the EP. CAPL resent the written notice.
Cape Immersion Tours	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Care For Hedland Environmental Association	08/02/2023	CN-000100	Email	Upon Care for Hedland Environment Association (CFH) self-identifying themselves, CAPL provided an overview of the activity and provided a link to their website for further information regarding the activity. CAPL notified the CFH that they welcome meaningful feedback. CFH requested to be included in the consultation process. CAPL notified CFH that further engagement would commence shortly.	No objection or claim raised.		
Care For Hedland Environmental Association	08/02/2023	OC-000140	Email	CAPL organised a meeting with CFH to provide information about upcoming activities.	No objection or claim raised.		
Care For Hedland Environmental Association	22/02/2023	OC-000259	Virtual Meeting	CAPL spoke with CFH and provided an overview of their current consultation hub and update on their Environment Plan. CFH nominated themselves as a relevant person. CFH have been undergoing a turtle monitoring program over the past 20 years, CFH would be interested in a collaboration with CAPL with marine turtles being their primary interest. CFH confirmed they will meet with the committee and revert back with any additional questions they may have for CAPL.	No objection or claim raised.		
Care For Hedland Environmental Association	11/05/2023	OB-000508	Email	CFH advised CAPL that they did not have any specific concerns regarding the activities. CFH advised that they did, however, have general concerns around the potential and need to mitigate	No specific concerns, just general concerns around potential and need to mitigate impacts to marine turtles.	**Claim has merit:** Marine turtles identified as a particular value or sensitivity	No change made to the EP. Threatened and/or migratory marine turtles with the potential

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				impacts to marine turtles as Port Hedland's Flatback Turtle population is genetically linked to Barrow Island/North West Shelf population.	Port Hedland's Flatback turtles are genetically linked to the Barrow Island/North West Shelf population.	and may be impacted by the activities. Given their interest in monitoring turtle populations, Chevron must consider if the activities impact on their monitoring program.	to be present within the EMBA are discussed in Section 4.3.3.2 of the EP, and are considered in the Risk Assessment (Section 7). This engagement was closed out with CFH.
Care For Hedland Environmental Association	15/06/2023-19/07/2023	OB-000647	Email	CAPL continued consultation with CFH and sent through a written notice of the upcoming OPP activity. CAPL informed CFH that the risk and impacts would be similar to the Environment Plans. CFH advised that the flatback turtles that nest in Port Hedland have been genetically linked to Barrow Island and the NWS Flatback turtle population. CFH sent through the details of the chairperson for CAPL to contact and discuss further opportunities with Care for Hedland. A meeting was organised between CFH and CAPL representatives for the 18th July. CAPL sent a summary email following the face-to-face meeting highlighting the information regarding the Chevron Community Spirit grant and turtle monitoring opportunities with Pendoley Environmental. CAPL advised that if CFH has any questions about the EP and OPP please don't hesitate to ask.	No objection or claim raised.		
Care For Hedland Environmental Association	16/06/2023-26/06/2023	OC-000732	Email	CAPL responded to CFH and advised that they would be interested in discussing turtle monitoring with CFH further. CFH responded advising they were looking forward to future discussions. CAPL emailed CFH requesting a meeting for the 18th or 19th of July. CFH confirmed they were available and CAPL responded advising they were planning to be in Port Hedland. CFH advised they were pleased to meet CAPL in person and offered a location to meet. CAPL advised they would confirm with CFH once they had all the details sorted and enquired as to the best contact number for CFH."	No objection or claim raised.		
Care For Hedland Environmental Association	18/07/2023-18/07/2023	OC-000584	Face-to-face	CAPL met with CFH in Port Hedland to discuss Environment Plans, OPP, Chevron Community Spirit Grant and Turtle Monitoring Opportunities.	No objection or claim raised.		
Care For Hedland Environmental Association	19/07/2023	OC-000740	Email	CAPL sent a follow up email post meeting to thank CFH for their time and sent through links for the Chevron Community Spirit Fund and turtle monitoring programs. CAPL advised if CFH has any further questions about CAPL activities they should get in touch.	No objection or claim raised.		
Carnarvon Chamber of Commerce Inc.	10/01/2023	CN-000882	Email	CAPL advised the Carnarvon Chamber of Commerce of CAPLs intentions of releasing information regarding their upcoming activities and identified CCCI as a possibly relevant stakeholder. CCCI advised CAPL they were happy to have a meeting or meet in person. CAPL offered to have a conversation over the phone in the first instance.	No objection or claim raised.		
Carnarvon Chamber of Commerce Inc.	08/02/2023	CN-000229	Email	CAPL advised the Carnarvon Chamber of Commerce 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 the Carnarvon Chamber of Commerce that they welcome meaningful feedback.	No objection or claim raised.		
Carnarvon Chamber of Commerce Inc.	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Carnarvon Energy	14/02/2023	CN-000217	Email	CAPL advised that Carnarvon Energy 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 Carnarvon Energy that they welcome meaningful feedback.	No objection or claim raised.		
Carnarvon Energy	28/09/2023-02/10/2023	OC-000785	Email	Carnarvon Energy thanked CAPL for providing information regarding their environment plans and stated that they have no further request for any information.	No objection or claim raised.		
Centre for Whale Research Western Australia (CWR)	10/02/2023	CN-000409	Email	CAPL advised the CWR 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 the Centre for Whale Research that they welcome meaningful feedback. CAPL followed up to ensure that they received the formal notification regarding CAPL's activities.	No objection or claim raised.		
Centre for Whale Research Western Australia (CWR)	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email.	No objection or claim raised.		

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				CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.			
City of Karratha (Pilbara)	19/12/2022	OC-000131	Email	CAPL advised the City of Karratha had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. CAPL organised to present to Council.	No objection or claim raised.		
City of Karratha (Pilbara)	31/01/2023	OC-000290	Face-to-face	CAPL met with the City of Karratha to provide an overview of their new approach to consultation along with an update on their Environment Plans. CAPL requested time to speak to the City of Karratha council on their Environment Plans.	No objection or claim raised.		
City of Karratha (Pilbara)	01/02/2023	OC-000130	Email	CAPL thanked the City of Karratha for their time and participation regarding CAPL's consultation process. CAPL confirmed they would like the opportunity to present to the Council Briefing. CAPL provided a list of other organisations they are currently consulting and asked if the City of Karratha could provide relevant ENGOs CAPL should proactively engage.	No objection or claim raised.		
City of Karratha (Pilbara)	06/02/2023	CN-000369	Email	CAPL advised the City of Karratha 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 City of Karratha that they welcome meaningful feedback. CAPL requested that this activity overview be shared at the EDM, and would be in Karratha/Roebourne in the future and would be available for further discussion.	No objection or claim raised.		
City of Karratha (Pilbara)	15/02/2023	OC-000135	Email	CAPL engaged with the City of Karratha to discuss the most efficient method to inform the community of CAPL's activities.	No objection or claim raised.		
City of Karratha (Pilbara)	20/02/2023	OC-000258	Virtual Meeting	CAPL met with the City of Karratha Council. CAPL provided an overview of their new online consultation hub and update on their Environment Plans. The City of Karratha Council complemented the level of detail by CAPL and posed a question on well decommissioning and seismic activities. CAPL informed the City of Karratha Council of the preventative measures that are in place as safeguards. CAPL offered to answer any further questions that may arise.	No objection or claim raised.		
City of Karratha (Pilbara)	20/02/2023	OC-000301	Email	CAPL reached out to the City of Karratha to thank them for their hospitality and to communicate their ongoing commitment to consultation.	No objection or claim raised.		
City of Karratha (Pilbara)	04/05/2023	OC-000454	Email	CAPL reached out to the City of Karratha to provide any feedback they may have on the activity.	No objection or claim raised.		
Commonwealth Fisheries Association (CFA)	05/10/2022	CN-000470	Email	CAPL advised CFA 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Commonwealth Fisheries Association (CFA)	14/03/2023	CN-000192	Email	CAPL sent a formal written notification advising CFA 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 the CFA that they welcome meaningful feedback.	No objection or claim raised.		
Commonwealth Fisheries Association (CFA)	07/11/2023	OB-000917	Phone	CFA advised they were consulted "out" and were not responding to consultation emails. They recommended that a hub to protect fisher's interests be created as they don't have the capacity. CFA sated that they believe industry should find a better way to consult.	CFA raised the need to protect fisher's interests, and that consultation practices could be improved.	**Claim has merit:** CAPL activities do have the potential to impact fishers, and acknowledge CFA's comment on the consultation process.	No change made to the EP. The presence of fishing activities within the region are described in Section 4, and potential impacts and risks to fishing activities are assessed in Section 7.
Commonwealth Fisheries Association (CFA)	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Conservation Council of WA (CCWA)	10/02/2023	CN-000225	Email	CAPL advised that the CCWA 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 the CCWA that they welcome meaningful feedback. CAPL followed up to confirm if email was received.	No objection or claim raised.		
Conservation Council of WA (CCWA)	27/03/2023	OC-000159	Phone	CAPL contacted CCWA to confirm receipt of formal notification. CCWA confirmed that they would forward on to the appropriate representatives.	No objection or claim raised.		

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Conservation Council of WA (CCWA)	11/05/2023	OC-000532	Email	CAPL reached out to the CCWA to provide any feedback they may have on the activity. CAPL confirmed that the CCWA has not expressed specific concerns or objections to the planned activity. CCWA advised CAPL of their intention and interest in providing feedback on the Environment Plans and activities. CAPL informed CCWA that consultation had been finalised but, if they could provide their feedback as soon as possible, CAPL would possibly be able to consider the feedback and include it in the Environment Plans. CAPL welcomed the opportunity to meet with CCWA to discuss ongoing consultation for future activities.	CCWA advised CAPL of their intention and interest in providing feedback on the Environment Plans and activities.	**Claim has merit:** CCWA has been identified as a relevant person, and have indicated their intention to provide feedback. As such, they should have an opportunity to provide feedback.	No change made to the EP. Additional engagement with CCWA took place.
Conservation Council of WA (CCWA)	9/08/2023	OC-000612	Virtual Meeting	CAPL met with CCWA on Teams following requested for engagement and discussion on Environment Plans. CCWA advised that they have been overwhelmed for consultation requests and requested that early engagement would support them to be able to provide meaningful feedback. CAPL and CCWA agreed that it was important to focus on opportunities for positive engagement and collaboration around data and research gaps. CCWA advised that they would follow up with any further questions but are interested in meeting in person in Perth in a few weeks' time.	No objection or claim raised.		
Conservation Council of WA (CCWA)	15/08/2023-15/08/2023	OC-000617	Email	CAPL wrote to CCWA to capture notes and discussions following the recent meeting with reiteration of a desire to meet in person and build a relationship.	No objection or claim raised.		
Conservation Council of WA (CCWA)	31/08/2023-31/08/2023	OC-000630	Phone	CAPL contacted CCWA via phone and left a voicemail in order to arrange a meeting.	No objection or claim raised.		
Conservation Council of WA (CCWA)	18/09/2023-18/09/2023	OC-000660	Email	CAPL contacted CCWA to reiterate its interest in meeting in person following the virtual meeting held in August.	No objection or claim raised.		
Conservation Council of WA (CCWA)	20/09/2023-20/09/2023	OC-000714	Email	CAPL responded to CCWA and requested to meet online in order to suit CCWA team members. CAPL proposed a meeting in the week commencing the 2nd of October 2023.	No objection or claim raised.		
Conservation Council of WA (CCWA)	19/10/2023-19/10/2023	OC-000847	Email	CAPL wrote to CCWA in response to comments made in an online article regarding Barrow Island. CAPL offered CCWA opportunity to meet in order to be further briefed on our environmental management of Barrow Island and the issues raised.	No objection or claim raised.		
Conservation Council of WA (CCWA)	19/10/2023-19/10/2023	OC-000848	Email	CCWA responded to CAPL email seeking clarification around quarantine incursions on Barrow Island and whether CAPL has details on the species of scale insects and earwigs that have been detected. CCWA said they were keen to know about the changes CAPL will be making to improve its biosecurity management and the measures it will apply to control any pest species that have been released into the Barrow Island environment.	1 CCWA requested further information regarding quarantine incursions on Barrow Island and biosecurity management. 2 CCWA queried CAPL on the species of scale insects and earwigs that have been detected.	1. **Claim has merit** Biosecurity risks are relevant to offshore activities, and as a relevant person it is fair and reasonable to provide CCWA with further information. 2. **Claim does not have merit.** This activity is limited to an offshore location, and insects and earwigs are not relevant to the Operational Area or EMBA.	No change made to the EP. Additional engagement with CCWA took place.
Conservation Council of WA (CCWA)	19/10/2023-19/10/2023	OC-000849	Email	CAPL provided CCWA a link to the Gorgon Environment Performance Report highlighting the page which included the information they requested. CAPL again extended offer to arrange a meeting with our Environment and Quarantine team to provide a briefing on biosecurity management.	No objection or claim raised.		
Conservation Council of WA (CCWA)	19/10/2023-19/10/2023	OC-000850	Email	CCWA advised that they would review the Gorgon Environmental Report and will revert next week.	No objection or claim raised.		
Conservation Council of WA (CCWA)	19/10/2023-27/11/2023	OB-000959	Email	CCWA thanked CAPL for their response, and raised additional questions: 1. Can you advise the species of scale insect (and associated sooty mould) and the status of its management? This information is not contained in the document provided. 2. Does Chevron have 'import' quarantine procedures? For example, are food, building materials and other high-risk commodities pretreated before leaving the mainland? For lower risk commodities, what are the treatment/inspection procedures? 3. What is the current status of Anisolabis maritima and Coleocoptus senio? Have these two species been eradicated from Barrow Island?	CCWA raised multiple queries in regards to onshore invasive species, quarantine procedures and baseline studies on Barrow Island.	**Claims do not have merit** While CAPL acknowledge the significance and merit of the claims raised, this activity is limited to an offshore location. As such, the claims are not relevant to this activity scope.	

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				4. Will an eradication program be implemented for Menemerus nigli? 5. How is food waste being managed to avoid food plants establishing on Barrow Island? Are you able to provide these protocols as they relate to inspections and precautionary pretreatments of high-risk produce being transported to Barrow Island? Did Chevron do any base-line biological studies prior to its industrial activities on Barrow Island to establish the presence/absence of pest species?			
Coral Bay Progress Association	03/01/2023	OC-000113	Email	The Shire of Carnarvon provided CAPL with a contact at the Coral Bay Progress Association for CAPL to contact. CAPL advised the Coral Bay Progress Association had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. A meeting was organised.	No objection or claim raised.		
Coral Bay Progress Association	06/02/2023	CN-000114	Email	CAPL advised the Coral Bay Progress Association 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 Coral Bay Progress Association that they welcome meaningful feedback.	No objection or claim raised.		
Coral Bay Progress Association	27/02/2023	OC-000265	Phone	CAPL spoke with the representatives from the Coral Bay Progress Association. Coral Bay Progress Association advised that they would discuss the Environment Plans during an internal meeting and revert back to CAPL with any comments or questions.	No objection or claim raised.		
Coral Bay Progress Association	02/03/2023	OC-000292	Virtual Meeting	CAPL met with the Coral Bay Progress Association to provide an overview of their new approach to consultation along with an update on their Environment Plans.	No objection or claim raised.		
Coral Bay Progress Association	10/05/2023	OC-000439	Email	CAPL reached out to the Coral Bay Progress Association to provide any feedback they may have on the activity. CAPL confirmed that the Coral Bay Progress Association has not expressed specific concerns or objections to the planned activity.	No objection or claim raised.		
Coral Bay Progress Association	07/08/2023	OC-000068	Phone	CAPL called to follow up their recent meeting to understand whether there was interest in meeting up. Coral Bay Progress Association confirmed that CAPL's Environment Plan information had been shared but there has been no interest in engaging further at this point.	No objection or claim raised.		
Coral Futures Corporation	04/05/2023	CN-000399	Email	CAPL advised that Coral Futures Corporation 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 Coral Futures Corporation that they welcome meaningful feedback. Coral Futures Corporation responded to CAPL and wish to be included in the continuing consultation process regarding the activity. Coral Futures has planned an aquaculture project in the zone of the CAPL's planned activity and seek to understand the potential impacts (if any) and risks that may arise and have potential for impact from CAPL's proposed activity, including air and water quality, seabed habitat, and marine fauna. A meeting was organised.	No objection or claim raised.		
Coral Futures Corporation	11/05/2023	OB-000428	Virtual Meeting	CAPL presented to Coral Futures Corporation who have an aquaculture license in state waters near Dampier to grow coral. Coral Futures Corporation would like to be advised of ongoing activities from CAPL and be included in emergency notifications. Coral Features Corporation sent a follow up email thanking CAPL for their time, and expressed interest in further engagement.	Coral Futures Corporation requested ongoing engagement and notification in the event of an emergency.	**Claim has merit:** Coral Futures Corporation have planned activities adjacent to the EMBA, given their location (and the nature of emergency conditions), their request to be notified in the event of an emergency and receive ongoing consultation has merit.	Table 8-5 and Section 8.3.4.2 in the EP have been revised to include incident notifications to relevant persons. Notification in the event of an emergency is covered under existing ongoing consultation requirements for 'potentially affected persons' in Table 8-5 of the Implementation Strategy.
Mardathoonera Cultural Heritage Pty Ltd	22/08/2023-22/08/2023	OC-000623	Phone	CAPL received a voicemail from a self-identified relevant person (SIRP) advising that they were interested in having a conversation with CAPL. CAPL returned the phone call leaving a voicemail.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	23/08/2023-23/08/2023	OC-000626	Phone	The SIRP contacted CAPL via phone to identify themselves as a Traditional Custodian for Mardathoonera and therefore a Relevant Person for ongoing consultation. CAPL confirmed that it would welcome the opportunity to meet with the SIRP to discuss its activities.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	28/08/2023-28/08/2023	OC-000629	Phone	CAPL confirmed meeting time and location in Karratha on Wednesday 30 August 2023 with SIRP.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	04/09/2023-30/08/2023	OC-000632	Face-to-face	CAPL met with SIRP and representatives for an introductory meeting in Karratha. SIRP and representatives confirmed significance and importance of Barrow Island and their interest in CAPL's offshore activities. CAPL confirmed that it would provide a number of available dates for a visit to Barrow Island.	CAPL confirmed that it would be able to work with SIRP as a relevant person.	**Claim has merit:** As a relevant person, it is fair and reasonable to provide ongoing engagement	Ongoing engagement with this stakeholder is taking place. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations

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				CAPL confirmed that it would treat SIRP and people as Relevant Persons for the purposes of developing its Environment Plans. CAPL committed to confirming availability to meet again in Karratha in the week commencing the 11th of September.			people and/or representative bodies.
Mardathoonera Cultural Heritage Pty Ltd	04/09/2023-04/09/2023	OC-000635	Phone	CAPL contacted SIRP to arrange meetings in Karratha on the 12th and 14th of September. Two separate meetings confirmed.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	08/09/2023-08/09/2023	OC-000640	Phone	CAPL confirmed in person meeting in Karratha on Tuesday 12 September with SIRP. CAPL confirmed intent to discuss current EP activities and OPP.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	12/09/2023-12/09/2023	OC-000646	Face-to-face	CAPL met with SIRP in Karratha to share information sheets on EP's and OPP. SIRP advised that they are concerned about impacts to their stories and songlines CAPL confirmed that it would be able to work with SIRP to design how we consult on current and future activities. CAPL and SIRP agreed to meet again at the earliest opportunity.	CAPL confirmed that it would be able to work with SIRP to design how we consult on current and future activities.	**Claim has merit:** As a relevant person, it is fair and reasonable to provide ongoing engagement	Ongoing engagement with this stakeholder is taking place. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies.
Mardathoonera Cultural Heritage Pty Ltd	15/09/2023-15/09/2023	OC-000662	Phone	CAPL spoke with SIRP in regard to coordinating next meeting with a CAPL General Manager. SIRP proposed availability in the week commencing 18 September and potentially week commencing 25 September. SIRP advised that she would confirm availability either today (14 September) or 18 September.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	18/09/2023-18/09/2023	OC-000661	Phone	CAPL contacted SIRP to arrange next meeting for consultation and left a voicemail.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	19/09/2023-19/09/2023	OC-000713	Phone	SIRP contacted CAPL advising that they would not be available to meet again until after 27 September. CAPL reiterated that it was looking forward to meeting again.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	29/09/2023-29/09/2023	OC-000766	Phone	CAPL left voicemail for SIRP to arrange meeting in Karratha	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	29/09/2023-29/09/2023	OC-000768	Phone	CAPL spoke with SIRP over the phone. SIRP advised that they will confirm availability for in person meeting later today or on Monday.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	02/10/2023-02/10/2023	OC-000818	Phone	CAPL confirmed availability to travel to BWI with SIRP via text message after call went to voicemail. SIRP advised that they would come back to confirm. SIRP advised that earliest time available to meet in Karratha to discuss activities with her legal representation would be after October 2.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	06/10/2023-06/10/2023	OC-000822	Phone	CAPL attempted contact with SIRP to confirm details for meeting in KTA and visit to BWI.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	13/10/2023-13/10/2023	OC-000827	Phone	CAPL contacted SIRP by telephone and left a voicemail message requesting call back to confirm meeting in Karratha on the 26th of October and visit to Barrow Island in November	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	13/10/2023-13/10/2023	OC-000828	Phone	CAPL sent SIRP text message requesting call to: • Confirm meeting in Karratha on 26 October 2023 to discuss EP • Confirm that WHS 4D Seismic EP had been deferred • Confirm arrangements for Barrow Island Visit CAPL provided link to EP information sheet on CAPL website confirming that it was the same information provided to SIRP at last meeting in Karratha on 12 September 2023	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	21/10/2023-21/10/2023	OC-000852	Phone	SIRP contacted CAPL by phone and sent text. SIRP apologised for delay in responding, and confirmed 30 October for meeting with CAPL, SIRP and SIRP legal team. SIRP advised that they could call again on Monday 23 October	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	21/10/2023-21/10/2023	OC-000853	Phone	CAPL attempted to call SIRP but didn't connect. CAPL sent a text message to SIRP to confirm that we would be available to meet on the 30 October 2023. CAPL advised SIRP that it was still available to meet in Karratha in the week commencing the 23 October	No objection or claim raised.		

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Mardathoonera Cultural Heritage Pty Ltd	23/10/2023	OC-000854	Phone	CAPL spoke to SIRP by telephone. SIRP confirmed that the earliest their legal representation would be available is 30 October 2023. CAPL confirmed that it could meet SIRP on the 30 October 2023 in Karratha.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	25/10/2023-25/10/2023	OC-000864	Phone	CAPL attempted to call SIRP but didn't connect. CAPL sent text message to SIRP Confirmed that CAPL was arranging for SIRP's support person to travel to Karratha on 30 October. CAPL advised that they could collect CAPL Support person from the airport and bring to meeting.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	25/10/2023-25/10/2023	OC-000865	Phone	SIRP sent a text message to CAPL confirm lunch time meeting in Karratha on 30 October and that they were looking forward to meeting us all	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	25/10/2023-25/10/2023	OC-000866	Phone	CAPL confirmed lunch time appointment in Karratha with SIRP. Requested attendees for meeting	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	25/10/2023-25/10/2023	OC-000867	Phone	CAPL and SIRP confirmed attendance for meeting in KTA on 30 October	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	25/10/2023-25/10/2023	OC-000869	Phone	SIRPs solicitors contacted CAPL via phone to discuss meeting with SIRP.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	27/10/2023-27/10/2023	OC-000870	Phone	SIRPs solicitors contacted CAPL to confirm that CAPL was managing the travel arrangements for SIRP's support person for consultation on the 8 November	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	30/10/2023-30/10/2023	OC-000871	Email	CAPL wrote to SIRPs solicitors to confirm arrangements for meeting with SIRP in Karratha on November 8 and details for consultation, following phone discussion on 26 October 2023.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	30/10/2023-30/10/2023	OC-000874	Phone	CAPL contacted SIRP to discuss upcoming consultation meeting in Karratha on 8 November. CAPL confirmed with SIRP that it was looking after travel arrangements for SIRP support person.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	02/11/2023-02/11/2023	OC-000892	Phone	CAPL contacted SIRP by phone, but didn't connect. CAPL forwarded text message to SIRP to request call back to discuss visit.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	02/11/2023-02/11/2023	OC-000893	Email	SIRPs solicitors confirmed receipt of email sent by CAPL on 30 October. SIRPs solicitors informed CAPL that SIRP would like an additional support person to attend the meeting.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	02/11/2023-02/11/2023	OC-000894	Email	CAPL sent email to SIRPs solicitors with a draft agenda for the meeting in KTA on 8 November. Confirmed that CAPL was flexible with timing and order of items. CAPL followed up asking if SIRP had any further comments or changes before finalisation.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	03/11/2023	OC-000895	Phone	CAPL contacted SIRP via phone, leaving a message and text message SIRP returned call to CAPL to confirm details for meeting in KTA on Wednesday 8 November. SIRP confirmed receipt of meeting agenda via SIRPs solicitors. SIRP advised of opportunity to provide Welcome to Country which was accepted by CAPL and confirmed for 9 November, on country.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	07/11/2023	OC-000908	Email	SIRP agreed to the meeting time and date. CAPL was happy to confirm the meeting and confirmed booking.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	07/11/2023-08/11/2023	OC-000946	Face-to-face	CAPL met with SIRP and support persons in Karratha to consult on Gorgon Umbilical and JIC activities.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	08/11/2023	OC-000933	Email	CAPL contacted law firm representing SIRP to discuss and organise actions discussed at meeting. CAPL also provided further information and links to discussed topics.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	08/11/2023-08/11/2023	OC-000948	Phone	SIRP contacted CAPL via text message to confirm meeting participants for consultation and that SIRP was looking forward to the meeting.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	08/11/2023-08/11/2023	OC-000949	Phone	CAPL sent SIRP a text message to thank SIRP for consultation meeting. CAPL sought confirmation from SIRP that the planned meeting for the next day. SIRP confirmed that they thought the meeting was a good, robust meeting and confirmed plan for meeting the next day.	No objection or claim raised.		

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Mardathoonera Cultural Heritage Pty Ltd	09/11/2023-09/11/2023	OC-000950	Phone	SIRP contacted CAPL via text message to invite CAPL for further conversations on the morning of the 9th and that they were looking forward to sharing stories.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	10/11/2023	OB-000932	Email	CAPL reached out to SIRPs solicitors in regards to invoices for consultation participants.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	10/11/2023-10/11/2023	OC-000927	Phone	SIRP contacted CAPL to confirm BWI trip details and to confirm interest to continue consultation	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	13/11/2023-13/11/2023	OC-000951	Phone	CAPL contacted SIRP by text message to confirm that it was expecting an invoice from them for the consultation meeting in Karratha on the 8th and 9th of November. CAPL confirmed the names of SIRP party to attend next consultation meeting on BWI.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	14/11/2023	OC-000953	Email	CAPL provided the consultation protocol document to SIRP and their legal representatives and attached CAPL engagement plan for consultation used for co-design. CAPL advised they would send separate negotiation protocol for UCH.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	14/11/2023-15/11/2023	OC-000952	Phone	CAPL requested email address of participants for consultation meeting on BWI in order to send through induction information. SIRP requested support with capturing stories.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	14/11/2023-17/11/2023	OC-000934	Email	Details regarding the upcoming visit to BWI was discussed with schedules and flights provided and pre-arrival/induction requirements.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	17/11/2023-19/11/2023	OC-000941	Email	CAPL forwarded information regarding consultation to SIRP and asked to discuss the following day.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	20/11/2023-27/11/2023	OB-000954	Email	SIRP's solicitors contacted CAPL on behalf of SIRP to clarify consultation and request further information. • Any oil spill modelling conducted in preparation of the EPs, and/or in relation to the Gorgon Project; • Any surveys, including ecological and cultural heritage surveys, conducted in preparation of the EPs, and/or in relation to the Gorgon Project; • Any information about submarine freshwater springs and migratory patterns for animals such as whales, turtles and dugongs in the vicinity of the activities subject of the EPs, and the source of such information; • Any information about the effects and impacts on the migratory, communication, birthing and/or feeding patterns of whales of the activities subject of the EPs, and the source of such information; • Any audiovisual or other multimedia material explaining the activities subject of the EPs and associated impacts and risks in a way that can be clearly understood. CAPL provided a response, clarifying consultation scopes and providing further information in regards to all points raised by SIRP solicitors/SIRP. SIRP has requested that details are treated as sensitive and therefore detail is provided in the Sensitive information report.	SIRP requested further information in regards to CAPL activities.	**Claims have merit:** As a relevant person, the request for further information is considered fair and reasonable. The points raised for clarification are considered relevant to the activity scopes.	No change made to the EP. CAPL responded to the relevant person and addressed all points raised during engagement.
Mardathoonera Cultural Heritage Pty Ltd	20/11/2023-22/11/2023	OB-000947	Face-to-face	CAPL provided a visit to BWI between 20th and 22nd of November 2023 for further consultation on Gorgon Umbilical and JIC activities. • CAPL provided an overview of the Gorgon Umbilical and JIC project installation activities • Mardathoonera representatives informed CAPL of their connection with Barrow Island and surrounding waters. Mardathoonera are saltwater people who are from the ocean. There are songlines that go through Barrow Island and offshore and connect Barrow Island to the mainland. This includes a whale song line. • Mardathoonera representatives identified culturally significant areas on Barrow Island. Mardathoonera representatives requested to participate in future CAPL turtle monitoring programs.	1. Barrow Island is highly valuable to the Mardathoonera people. 2. Requested to be involved in future Turtle tagging program.	**Claims have merit:** 1. CAPL acknowledge the Mardathoonera people's connection to Barrow Island and surrounding waters. Although not a specific claim or objective, this must be acknowledged and considered in the EP. 2. CAPL noted request for Mardathoonera representatives to participate in future turtle tagging programs. CAPL will continue to work with Mardathoonera people on actioning this request as part of ongoing consultation.	The description of the values and sensitivities in Table 4-15 of the EP has been updated to describe the Mardathoonera values and sensitivities
Mardathoonera Cultural Heritage Pty Ltd	27/11/2023	OB-000957	Email	CAPL sent an email addressing questions raised during Barrow Island visit.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	05/12/2023-05/12/2023	OC-000969	Phone	CAPL attempted to make contact and left a message.	No objection or claim raised.		

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Mardathoonera Cultural Heritage Pty Ltd	06/12/2023-06/12/2023	OC-000970	Phone	CAPL spoke with SIRP via telephone. SIRP advised that responses from legal could be expected in the next few days. CAPL discussed desire to plan opportunities for meeting for consultation and relationship development in 2024.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	08/12/2023 – 11/12/2023	OC-000992	Email	CAPL reached out to touch base before receiving comments regarding two environment plans on Monday. SIRPs solicitors advised they would be in touch in the afternoon with comments.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	08/12/2023-08/12/2023	OC-000986	Email	CAPL sent email to SIRPs solicitors to confirm whether further support or input was required from CAPL ahead of receiving input on 11 December in relation to Gorgon Umbilical and JIC Install EPs.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	11/12/2023	OC-001003	Phone	Contacted CAPL via text in regard to interest in discussing elements of the EP following provision of responses via SIRPs solicitors and in progressing future conversations in 2024.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	11/12/2023	OC-001002	Phone	Contacted CAPL via text to confirm that SIRPs solicitors would be forwarding response shortly.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	11/12/2023	OC-000997	Email	SIRP's solicitors thanked CAPL for provided a response to SIRP's requests for further information. SIRP provided feedback on the Gorgon Umbilical and JIC EPs: Recognition: • As a Mardathoonera person and elder, SIRP requested specific revisions to the EP regarding language and how the Mardathoonera people are referred to. Songlines, oceans, and marine fauna • The sea is the source of energy for all life, it holds the codes that are encrypted in each person's body and the songlines and is the lifeforce for the world. • The places where the saltwater from the sea and the freshwater from the land connect are where the biggest energy lines are, and that connection is a force of creation relevant to a Dreaming story. • Songlines extend out from the land, through the sea and around the globe, connecting places, people and animals to each other, creating migratory patterns for animals and telling animals of the right time to birth and eat. • There is a large energy line that exists off the coast of Murujuga and runs through the area that CAPL operates in • SIRP is connected to the songlines. If the songlines are disrupted, SIRP and their people are disrupted – their *wirrart* (energy) is disconnected – like the whales, their feet get lost and they don't know where to go anymore. Cultural heritage mapping • SIRP notes CAPL's management of change (MoC) protocol. • SIRP welcomes the opportunity to collaborate with CAPL in conducting cultural heritage surveys. Emergencies • SIRP requests to be included in the notification to relevant persons in the event of an emergency. Climate change • SIRP noted the contribution of CAPLs gas projects to Scope 1, 2 and 3 emissions has an impact on SIRP's interests and activities. SIRP notes that a potential global warming scenario threatens any relevant person's interests and activities. Maps • SIRP expressed that that maps provided in the information sheet are lacking in detail and requested CAPL consider map detail, information simplicity and content. Audio-visual material • SIRP encourages the use of audio-visual material in future consultations. EMBAs • SIRP requested more information on how EMBAs are defined and seek relevant persons' input when defining EMBAs for future EPs. Decommissioning • SIRP requested further information regarding decommissioning of the Gorgon umbilical. SIRP has requested that further details of this interaction are treated as sensitive and therefore detail is provided in the Sensitive information report.	SIRP requested specific revisions to the EP regarding language and how the Mardathoonera people are referred to.	**Claim has merit:** CAPL acknowledges the information and feedback provided by SIRP regarding language used, and consider the requested revision fair and reasonable. While this comment was made in reference to the Gorgon Umbilical EP, it is deemed relevant and applicable to this EP as well.	CAPL have incorporated Mardathoonera people into the EP (including but not limited to Table 6-4).
					SIRP raised intangible and tangible values and connection to the songlines.	**Claim has merit:** CAPL acknowledge the intangible and tangible values raised by SIRP, and SIRP's connection to the songlines, which should be considered within the EP.	The description of the values and sensitivities in Table 4-15 of the EP has been updated to describe the Mardathoonera values and sensitivities. The values and sensitivities raised are considered throughout the risk assessment (Section 7).
					No objection or claim raised		
					SIRP requests to be included in the notification to relevant persons in the event of an emergency.	**Claim has merit:** As a relevant person, it is considered fair and reasonable to provide notification in the event of an emergency condition.	No change made to the EP. The commitment to notify relevant First Nations peoples in the event of an emergency is captured within Table 8-5 of the EP.
					SIRP raised interests and activities raised that may be impacted in a global warming scenario, and raised CAPL emissions in relation to climate change.	**Claim has merit:** CAPL acknowledge the relevant person's interests and activities raised that may be impacted in a global warming scenario and acknowledge CAPL activities contribute emissions.	No change made to the EP. Greenhouse gas emissions are discussed in section 7.4 of the EP. The EP relates to activities to improve the reliability of existing offshore infrastructure that supports current production. CAPL notes: • Assessment of the greenhouse gas emissions for the Gorgon Project is dealt with within the accepted Operations EPs. • New greenhouse gas conditions for the Gorgon LNG facility which require scope one net emissions to be reduced to net zero by 2050, together with 5-yearly reduction targets commencing in 2030

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							Gorgon is also required to reduce its scope 1 emissions to net zero by 2050 under the Australian Government's Safeguard Mechanism.
					SIRP requests revisions to future information sheets in regards to map detail, information simplicity and content.	**Claim has merit:** CAPL acknowledge the feedback provided by SIRP on the consultation process and materials to facilitate better engagement.	No change made the EP. Feedback will be considered in the drafting of future EP engagement and consultation materials.
					SIRP encourages the inclusion of audio-visual material in future consultations.	**Claim has merit:** CAPL acknowledge the feedback provided by SIRP on the consultation process and materials to facilitate better engagement.	No change made the EP. Feedback will be considered in planning of consultation for 2024.
					SIRP requests that future EP consultation provide more information to relevant persons on how EMBAs are defined and seek relevant persons' input when defining EMBAs.	**Claim has merit:** CAPL acknowledge the feedback provided by SIRP on the consultation process and materials to facilitate better engagement.	No change made the EP. Feedback will be considered in the drafting of future EP development.
					SIRP requested further information regarding decommissioning of the Gorgon Umbilical.	**Claim does not have merit:** As a relevant person, it is considered fair and reasonable to request further information, however the Gorgon Umbilical project is out of scope for this EP. Regardless, it is also noted that decommissioning is out of scope for the Gorgon Umbilical EP.	
Mardathoonera Cultural Heritage Pty Ltd	12/12/2023	OC-000995	Phone	CAPL spoke with Mardathoonera representatives via telephone to acknowledge receipt of comments on Gorgon Umbilical and JIC from SIRPs solicitors. CAPL advised that it was reviewing comments and would revert as soon as possible.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	12/12/2023	OC-001004	Phone	CAPL acknowledged response of EP comments and advised that they would reply imminently. CAPL advised that it was comfortable that it could address everything raised by Mardathoonera representatives and that there would be no requirement to meet. CAPL and Mardathoonera representatives confirmed interest to speaking before Christmas 2023 to confirm meetings and opportunities for 2024.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	15/12/2023	OC-001011	Email	CAPL provided response to Mardathoonera comments on EP via SIRPs solicitors.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	15/12/2023	OC-001012	Email	CAPL forwarded SIRPs solicitors email direct to Mardathoonera representatives.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	15/12/2023	OC-001015	Phone	Mardathoonera representatives provided new contact for CAPL. Mardathoonera representatives advised that they would be organising a meeting in 2024 and requested that they be copied into future communications	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	19/12/2023	OC-001037	Email	CAPL emailed MCH to outline the 2024 consultation agenda for CAPL activities. CAPL thanked MCH for all their input over the last few weeks and showed their appreciation. CAPL advised they would like to set up some time together to discuss consultation requirement regarding a number of activities: • WHS Deep and Dino South • Wheatstone Well Intervention • in situ Wellheads x2 • Gorgon 5 year revision • OPP	No objection or claim raised.		

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				• JIC operations EP CAPL also advised they would like to set up some informal opportunities to meet and build relationship. CAPL is hoping that together we can give some thought to how you would like consultations to look and map out a plan for 2024 to co-design future sessions. CAPL extended an invitation for MCH to visit the Perth office team in early 2024 and see how the Environmental team develops modelling and progresses our collaborative partnership to protect Ngurra and sea.			
Mardathoonera Cultural Heritage Pty Ltd	07/02/2024-16/02/2024	001220	Email	CAPL and MCH discussed: • Comments on consultation agreements • Timing options for an upcoming visit BWI and to consult on the drilling EPs	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	27/02/2024	001116	Email	CAPL provided response to MCH comments on the JIC Installation EP via MCH solicitors.	No objection or claim raised.		
Mardathoonera Cultural Heritage Pty Ltd	05/03/2024	001225	Email	CAPL provided MCH a summary of outstanding actions relating to comments on consultation and negotiation agreements, planning for upcoming consultation meetings and BWI trip.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	06/03/2024-08/03/2024	001224	Email	CAPL emailed MCH outlining the agenda and attendees for upcoming meetings relating to the negotiation and consultation agreement and consultation on well related EP's. CAPL thanked MCH for their attendance on 8 March 2024. CAPL outlined the meeting actions, including request to provide comments / updates on the JIC Installation EP by w/c 11 march 2024.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	12/03/2024	001223	Email	MCH provided CAPL with the draft negotiation protocol. CAPL confirmed receipt of the draft negotiation protocol and confirmed the attendees for an upcoming meeting.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	15/03/2024-25/03/2024	001221	Email	CAPL sent a summary email to MCH outlining: • Timing of BWI trip • Outlining scope and dates for MCH consultation input and feedback. CAPL noted that the timeframes for consultation align with that provided previously through co-design in 2023 • Summary of other recent correspondence with MCH. • Addressed MCH query relating to first nations engineering. CAPL resent the email on 25 March 2024 noting that a response had not bee received and requesting any advice as soon as practicable. CAPL noted that some dates for MCH consultation input and feedback had moved.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	20/03/2024-20/03/2024	001147	Phone	MCH contacted CAPL by phone to discuss progress. CAPL confirmed that it was still waiting for MCH to provide comments and feedback on negotiation and consultation protocols.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	26/03/2024	001222	Email	Consultant for MCH contact CAPL regarding a meeting regarding the relationship between CAPL and MCH. CAPL responded with potential meeting dates. CAPL also attached the summary of MCH consultation input and feedback required.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	28/03/2024	001227	Email	CAPL emailed MCH advising the JIC Installation EP will be submitted next week and requested MCH send through any information that they would like to include.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	28/03/2024	001158	Email	CAPL sent a follow up email to MCH solicitors requesting an update on whether comments would be received for the JIC installation EP. CAPL noted that some amendments to selected sections of the EP had been made and CAPL shared the revised information.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	28/03/2024	001159	Email	CAPL sent an email to MCH solicitors requesting confirmation of correct contact to liaise with regarding consultation.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	08/04/2024	001226	Email	MCH contacted CAPL requesting a meeting. CAPL confirmed it was available and requested some time windows for the meeting.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	08/04/2024	001218	Email	CAPL informed MCH solicitors that it plans to submit the EP and requested MCH solicitors to advise CAPL if there were any comments on the provided EP sections issued on 27 February 2024.	No objection or claim raised		
Mardathoonera Cultural Heritage Pty Ltd	09/04/2024	001219	Email	CAPL sent an email to MCH solicitors regarding the EP. CAPL outlined the engagement that had been undertaken with MCH on the EP since September 2023. CAPL noted that feedback received had been incorporated into the EP. CAPL advised that it had not received any additional input from MCH on the updated EP sections provided on 27 February 2024. CAPL advised the updated EP will	No objection or claim raised		

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				be submitted to NOPSEMA and CAPL looks forward to further engagement with Ms Cooper on future Environment Plans.			
Mardathoonera Cultural Heritage Pty Ltd				To summarise consultation with MCH to date: • CAPL commenced consultation with Mardathoonera people on 22nd August 2023 when they self-identified as a relevant person. • CAPL has met with Mardathoonera representatives in four face-to-face meetings including multiday trip on Barrow Island on the 20-22 of November 2023. CAPL maintained contact through email and telephone correspondence. • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures. • Chevron has responded to a request for information by providing guidance to specific sections of the EP. • CAPL has considered feedback provided by MCH during consultation, including information on Mardathoonera people functions, interests and activities within the EMBA and all claims raised have been addressed • As CAPL has provided a reasonable period and sufficient information to representatives of the Mardathoonera people 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 11A. CAPL will continue to engage with representatives of the Mardathoonera people as part of its ongoing consultation as outlined in Section 8.3.4 of the EP.			
Cruise Lines International Association	29/09/2023	CN-000800	Email	CAPL reached out to the Cruise Lines International Association as a potential relevant person, as suggested by Tourism WA. CAPL provided an overview of the CAPL activities in a factsheet, and advised that they were happy to discuss further.	No objection or claim raised.		
Cygnet Bay Pearl Farm	10/05/2023	CN-000441	Email	CAPL advised the Cygnet Bay Pearl Farm 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 the Cygnet Bay Pearl Farm that they welcome meaningful feedback.	No objection or claim raised.		
Cygnet Bay Pearl Farm	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Cygnet Bay Pearl Farm	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Department of Agriculture, Fisheries and Forestry - Fishing impacts (DAFF)	05/10/2022	CN-000470	Email	CAPL advised the DAFF 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Department of Agriculture, Fisheries and Forestry - Fishing impacts (DAFF)	15/02/2023	CN-000215	Email	CAPL sent a formal written notification advising DAFF 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 the DAFF that they welcome meaningful feedback.	No objection or claim raised.		
Department of Biodiversity, Conservation and Attractions (DBCA)	05/10/2022	CN-000471	Email	CAPL advised the DBCA 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 in a factsheet. CAPL notified the DBCA that they welcome meaningful feedback.	No objection or claim raised.		
Department of Biodiversity, Conservation and Attractions (DBCA)	24/01/2023	OC-000108	Email	The Shire of Carnarvon provided a contact at DBCA for CAPL to contact to organise a time to discuss the upcoming activity. CAPL advised that the DBCA had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. DBCA acknowledged that the location of the activity is relevant to the DBCA. The DBCA advised they added CAPL's information on the activity to the committee's agenda that is scheduled for 2 May 2023. Post this meeting the DBCA will be in contact with CAPL to address likely impacts	No objection or claim raised.		

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				(if any) to the outstanding universal value of the Ningaloo Coast World Heritage Area. CAPL indicated their intention to continue to engage and requested to meet in person.			
Department of Biodiversity, Conservation and Attractions (DBCA)	15/02/2023	CN-000109	Email	CAPL sent a follow up email providing an overview of the activity and provided a link to their website for further information regarding the activity. CAPL notified DBCA that they welcome meaningful feedback. Additional contacts within DBCA was provided to CAPL to provide consultation in the area of Ningaloo Coast and Shark Bay World Heritage Areas. CAPL expressed their intention to continue engagement, and requested additional contacts at the DBCA and whether an in-person meeting was possible.	No objection or claim raised.		
Department of Biodiversity, Conservation and Attractions (DBCA)	24/02/2023	OC-000267	Virtual Meeting	CAPL met with the representatives from DBCA Exmouth and provided an overview of their new approach to consultation along with an update on their Environment Plans. Discussion focused around EMBA map and shoreline loading queries. DBCA Exmouth advised CAPL of the importance of engagement with the World Heritage Committees and NOPSEMA guidelines and sensitivities relevant to World Heritage Areas.	DBCA Exmouth advised CAPL of the importance of engagement with the World Heritage Committees and NOPSEMA guidelines and sensitivities relevant to World Heritage Areas.	**Claims have merit:** The EMBA intersects the World Heritage area. As such the request to engage with the World Heritage Committee has merit.	No change made to the EP. Additional engagement with The Heritage Advisory Committee (NCWHAC) took place. World Heritage Properties are described in Section 4.6 of the EP, and the associated impacts, risks and control measures are described in Section 7.14 (Vessel Collision).
Department of Biodiversity, Conservation and Attractions (DBCA)	11/05/2023	OC-000456	Email	CAPL reached out to DBCA to provide any feedback they may have on the activity. CAPL confirmed that DBCA has not expressed specific concerns or objections to the planned activity. DBCA Exmouth contacted CAPL and notified them that all queries regarding Environment Plans and consultation on proposals should be sent to a separate branch of DBCA. CAPL sent the email to the appropriate inbox DBCA Exmouth pointed CAPL to.	No objection or claim raised.		
Department of Climate Change, Energy, the Environment and Water (DCCEEW)	16/05/2023-08/06/2023	CN-000547	Email	CAPL advised DCCEEW 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 advised that they welcome meaningful feedback. DCCEEW advised CAPL of the requirements regarding Underwater Cultural Heritage (UCH) and its importance to Aboriginal Corporations and people. CAPL acknowledged the email and informed DCCEEW that they are aware and understand the importance of UCH and have been engaging accordingly to ensure they meet the requirements and engage with the appropriate corporations.	1. Any proponent who is planning to undertake activities in the offshore environment should engage a suitably qualified and experienced maritime or underwater archaeologist for advice on how to mitigate risks associated with protected underwater cultural heritage (UCH). 2. The Department recommends undertaking a Desktop UCH Assessment to identify known and potential UCH resource in the environment that may be impacted by and activity and to propose a forward work program for additional UCH Impact Assessment if required. 3. A detailed assessment program should be aimed at adequately describing and assessing the UCH resource, identifying potential risks of impact to it, and proposing mitigation measures to adequately reduce the risk of or avoid impacts. 4. Adverse impacts include directly or indirectly disturbing or otherwise damaging protected UCH or causing the removal of protected UCH from waters or its archaeological context. 5. The UCH Act provides that the discovery of specified UCH must be notified. - This obligation includes any articles that appear to be of an archaeological nature including First Nations UCH, the remains of vessels or aircraft, and any associated articles. 6. Consider potential impacts to First Nations UCH. First Nations cultural heritage remains to occur within Australian waters up to depths	**Claims have merit:** All claims made by DCCEEW were considered relevant given CAPL's understanding of the legislation, recent focus and activity location. 1. Any proponent who is planning to undertake activities in the offshore environment should engage a suitably qualified and experienced maritime or underwater archaeologist for advice on how to mitigate risks associated with protected underwater cultural heritage (UCH). 2. The Department recommends undertaking a Desktop UCH Assessment to identify known and potential UCH resource in the environment that may be impacted by and activity and to propose a forward work program for additional UCH Impact Assessment if required. 3. A detailed assessment program should be aimed at adequately describing and assessing the UCH resource, identifying potential risks of impact to it, and proposing mitigation measures to adequately reduce the risk of or avoid impacts.	Section 7.3 was revised to reflect engagement with DCCEEW. 'ALARP decision context justification' was 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 7.3 has been updated with a summary of claim and response. Table 8-5 has been revised to capture engagement requirements with DCCEEW regarding UCH. Table 8-12 has been revised to include the UCH Act notification requirements. No additional changes made to the EP. As discussed in Section 4.6.2 Underwater cultural heritage, a desktop UCH assessment was undertaken, and no UCH was identified within the EMBA. The risks to UCH area assessed in 7.3 Seabed Disturbance.

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					of approximately 130-140 meters Proponents are strongly encouraged to engage early and often with First Nations people who may have an interest in a proposal in the nearshore and offshore environments. 7. Please include the Underwater Cultural Heritage team in your ongoing consultation process in relation to activities that have the potential to impact UCH.	4. Adverse impacts include directly or indirectly disturbing or otherwise damaging protected UCH or causing the removal of protected UCH from waters or its archaeological context. 5. The UCH Act provides that the discovery of specified UCH must be notified. - This obligation includes any articles that appear to be of an archaeological nature including First Nations UCH, the remains of vessels or aircraft, and any associated articles. 6. Consider potential impacts to First Nations UCH. First Nations cultural heritage remains to occur within Australian waters up to depths of approximately 130-140 meters Proponents are strongly encouraged to engage early and often with First Nations people who may have an interest in a proposal in the nearshore and offshore environments. 7. Please include the Underwater Cultural Heritage team in your ongoing consultation process in relation to activities that have the potential to impact UCH.	
Department of Climate Change, Energy, the Environment and Water - Director of National Parks (DNP)	05/10/2022	CN-000156	Email	CAPL advised the DNP 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 in a factsheet. CAPL notified the Director of National Parks that they welcome meaningful feedback. DNP advised CAPL of the regulations of petroleum activities within marine management and park areas and that they would like to be part of ongoing consultation relating to the project. DNP notified CAPL that the activity is occurring within Montebello Marine Park Multiple Use Zone (IUCN VI) which is managed under the North-west Marine Parks Network Management Plan 2018. DNP requested further information on the below to assist in raising any relevant objections and claims: - Threatened species that is likely or known to occur within the proposed / likely operational area - Relevant recovery plans and threat abatement plans for species known or likely to be present - How the proposed activity operates in accordance with the and relevant plans, such as managing activity location and, or timing to avoid key threatened species behaviours. CAPL responded with listing the threatened species and the relevant recovery plans determined to be relevant for the proposed activity. CAPL also confirmed they will manage impacts and risk to marine turtles by aligning with management action A8.1 in the Recovery Plan for Marine Turtles. For Pygmy Blue Whales, CAPL are currently conducting vessel noise modelling and will use the results of the modelling to inform the impact assessment in the EP. Management action A.2.3 of the Blue Whale Conservation Management Plan will be the key focus: 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. More broadly, impacts and risks to threatened species that may occur within the operational area will be managed through the following control measures: • implementation of the EPBC Regulations 2000 – Part 8, Division 1	DNP identified that the activity occurs within Montebello Marine Park Multiple Use Zone (IUCN VI) which is managed under the North-west Marine Parks Network Management Plan 2018. DNP requested further information regarding - Threatened species that is likely or known to occur within the proposed / likely operational area - Relevant recovery plans and threat abatement plans for species known or likely to be present - How the proposed activity operates in accordance with the and relevant plans, such as managing activity location and, or timing to avoid key threatened species behaviours.	**Claims have merit:** Activity does occur within the Montebello Marine Park, and is subject to the North-west Marine Parks Network Management Plan 2018. In addition to this, the consideration of Threatened species, recovery plans, and timing are standard considerations when working in offshore marine environments. As such the claims made have merit. As the stakeholder is a relevant organisation, the request for additional information regarding: • Threatened species that is likely or known to occur within the proposed / likely operational area • Relevant recovery plans and threat abatement plans for species known or likely to be present • How the proposed activity operates in accordance with the and relevant plans, such as managing activity location and, or timing to avoid key threatened species behaviours	No change made to the EP. Both the requirements of the North-west Marine Parks Network Management Plan 2018 and threatened species, recovery plans, and timing are considered and addressed in the Description of the Environment and the Risk Assessment sections throughout the EP. These claims were responded to via email, with the requested information. DNP had no further questions along with no objections or claims related to the activity .

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				• routine vessel discharges will be managed in accordance with MARPOL 73/78 and relevant Marine Orders • waste will be managed in accordance with a vessel waste management plan • in the event of an unplanned hydrocarbon release, Chevron's Australian Business Unit Consolidated Oil Pollution Emergency Plan and Operational and Scientific Monitoring Plan will be implemented as required. DNP had no further questions along with no objections or claims related to the activity and request that they be notified when the EP is published so they can review the risk assessment and mitigations.		is reasonable and appropriate.	
Department of Climate Change, Energy, the Environment and Water - Director of National Parks (DNP)	15/02/2023	CN-000194	Email	CAPL sent a follow up email providing an overview of the activity and provided a link to their website for further information regarding the activity. CAPL notified the DNP that they welcome meaningful feedback. DNP confirmed that they wish to be consulted as a relevant person, and to direct consultation to marineparksauthorisations@dcceew.gov.au	DNP confirmed that they wish to be consulted as a relevant person, and to direct consultation to marineparksauthorisations@dcceew.gov.au	**Claim has merit:** Activity does occur within the Montebello Marine Park, and DNP is a relevant person. Directing consultation to marineparksauthorisations@dcceew.gov.au is a reasonable and appropriate request.	No change made to the EP. Additional engagement with DCCEEW took place.
Department of Climate Change, Energy, the Environment and Water - Director of National Parks (DNP)	23/08/2023	OC-000628	Email	CAPL notified the DNP of the submission of 6 Environment Plans to NOPSEMA	No objection or claim raised.		
Department of Defence (DoD)	05/10/2022	CN-000474	Email	CAPL advised the DoD 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 in a factsheet. CAPL notified the relevant stakeholders that they welcome meaningful feedback. DoD responded that the proposed area is located within the North-west Exercise Area (NWXA) and restricted airspace. CAPL is advised that unexploded ordnance (UXO) may be present on and in the sea floor within the NWXA and must therefore be aware of the risk associated with conducting activities in the area (for example, the detonation of UXO). Additionally, CAPL is advised that (a) all activities in there are conducted at its own risk; and (B) the Commonwealth of Australia, represented by the DoD, takes no responsibility for (i) reporting the location and type of UXO that may be in the area (ii) identifying or removing any UXO from these areas; and (iii) any loss or damage suffered or incurred by CAPL or any third party arising out of, or directly related to, UXO in the area. To ensure CAPL's activities do not conflict with Defence training, Defence requires a minimum of 5 weeks notification prior to the commencement of activities and requested CAPL continue liaising with the Australian Hydrographic Service (AHS) for Notices to Mariners (NOTMAR), in particular ensure that the AHS is notified three weeks prior to the actual commencement of activities. This information is critical to maritime safety and reduces negative impacts on other maritime users. CAPL acknowledged DoD's advice.	The proposed area is located within the North West Exercise Area (NWXA) and restricted airspace. Chevron is advised that unexploded ordnance (UXO) may be present on and in the sea floor within the NWXA. Chevron must, therefore, inform itself as to the risks associated with conducting activities in the area (for example, the detonation of UXO). Defence requires a minimum of five weeks notification prior to the commencement of activities. DoD request any activities undertaken within Restricted Airspace comply with the relevant Notice to Airmen (NOTAM) restrictions and to liaise with adf.airspace@defence gov.au and the airspace controlling agency if restricted airspace is activated. DoD request continued liaison with the Australian Hydrographic Service (AHS) for Notices to Mariners (NOTMAR).	**Claim has merit:** CAPL acknowledge the advice provided by DoD is relevant to the JIC activity, based on the location of the activity and the required commitments raised: 1. CAPL note that unexploded ordnance (UXO) may be present on and in the sea floor 2. In order to ensure Chevron activities do not conflict with Defence training, Defence requires a minimum of five weeks notification prior to the commencement of activities. 3. CAPL notes that based on a map provided by DOD (OC-000368) it appears as though the Operational Area overlaps within a restricted airspace area. DoD request any activities undertaken within Restricted Airspace comply with the relevant Notice to Airmen (NOTAM) restrictions. and for CAPL to liaise with adf.airspace@defence.gov.au and the airspace controlling agency if restricted airspace is activated. 4. DoD request continued liaison with the Australian Hydrographic Service (AHS) for Notices to Mariners (NOTMAR).	Table 8-5 has been revised to include a new row for a pre-start notification to DoD. No additional changes were made to the EP. UXO Map was reviewed and confirmed no known UXO present within Operational Area, as documented in Section 4.4.6 Other marine and coastal industries of the EP. The Restricted Airspace map provided weas reviewed and confirmed no overlap with the Operational Area. Required Notices to Mariners captured within the EP (in Table 8-5).
Department of Defence (DoD)	14/02/2023	CN-000220	Email	CAPL advised that DoD 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 the DoD that they welcome meaningful feedback.	No objection or claim raised.		

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Department of Defence (DoD)	16/03/2023	OC-000368	Email	CAPL acknowledged receipt of DoD response. CAPL understands that the activity areas are located in the North-West Exercise Area (NWXA) and have checked where known unexploded ordnance (UXO) are using the UXO map UXO Map (whereisuxo.org.au) and there are no known UXOs present within the proposed operational area's for the activities consulted on, however CAPL note that there may be UXOs present on and in the sea floor. CAPL confirmed they will contact the Australian Hydrographic Service 3-weeks prior to any activities occurring. CAPL requested further clarification and understanding of where the restricted airspace is within the vicinity of the activity areas. DoD responded providing a map of restricted airspace.	No objection or claim raised.		
Department of Mines, Industry Regulation and Safety (WA DMIRS)	05/10/2022	CN-000470	Email	CAPL advised DMIRS 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Department of Mines, Industry Regulation and Safety (WA DMIRS)	09/05/2023	CN-000510	Email	CAPL sent a formal written notification advising DMIRS that they have 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 advised DMIRS that CAPL welcome meaningful feedback.	No objection or claim raised.		
Department of Primary Industries and Regional Development (WA DPIRD): Fisheries	05/10/2022	CN-000470	Email	CAPL advised DPIRD 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Department of Primary Industries and Regional Development (WA DPIRD): Fisheries	08/05/2023	CN-000453	Email	CAPL advised DPIRD 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 DPIRD that they welcome meaningful feedback.	No objection or claim raised.		
Department of Primary Industries and Regional Development (WA DPIRD): Fisheries	06/07/2023	OB-000799	Email	DPIRD states activities will have potential impacts on the commercial fishing sector. DPIRD suggests Chevron liaise closely with the Western Australia Fishing Industry Council in association with the following fisheries that have management boundaries within the EMBA, namely: • Marine Aquarium Managed Fishery • Mackerel Managed Fishery. • Pilbara Crab Managed Fishery • Onslow Prawn Managed Fishery • Western Australia Sea Cucumber Fishery, • Exmouth Gulf Prawn Managed Fishery • Nickol Bay Prawn Managed Fishery • Pilbara Trawl Fishery	DPIRD notes that CAPL activities may impact commercial fishers. DPIRD suggests engagement with WAFIC, specifically in regard to fisheries with management boundaries within the EMBA: • Marine Aquarium Managed Fishery • Mackerel Managed Fishery. • Pilbara Crab Managed Fishery • Onslow Prawn Managed Fishery • Western Australia Sea Cucumber Fishery • Exmouth Gulf Prawn Managed Fishery • Nickol Bay Prawn Managed Fishery • Pilbara Trawl Fishery	**Claim has merit:** CAPL acknowledge that the activity has the potential to result in impacts to fisheries, and WAFIC should be engaged with.	No change was made to the EP. Additional engagement with stakeholders identified during consultation were engaged with.
Department of Transport (DoT) - Maritime Environmental Emergency Response (MEER) - Marine Pollution (formerly OSRC Unit)	05/10/2022	CN-000475	Email	CAPL sent a follow up email advising DoT 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 the Department of Transport that they welcome meaningful feedback. DoT notified CAPL that if there is a risk of a spill impacting State waters from the proposed activities that DoT Oil Spill Response Unit is consulted as outlined in the Department of Transport Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (July 2020).	If there is a risk of a spill impacting State waters from the proposed activities, please ensure that the Department of Transport is consulted as outlined in the Department of Transport Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (July 2020).	**Claim has merit:** CAPL acknowledge that the activity has the potential to result in a spill that impacts state waters, and that DOT must be consulted in accordance with the Department of Transport Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (July 2020).	No changes to the EP required. Incident reporting requirement to DoT for spills potentially affecting State waters or land is already captured in Table 8-11 of the EP.
Department of Transport (DoT) - Maritime Environmental Emergency Response (MEER) - Marine Pollution (formerly OSRC Unit)	15/02/2023	CN-000168	Email	CAPL sent a follow up email advising DoT 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 the Department of Transport that they welcome meaningful feedback. DoT notified CAPL that if there is a risk of a spill impacting State waters from the proposed activities that DoT Oil Spill Response Unit is consulted as outlined in the Department of Transport Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (July 2020).	No objection or claim raised.		

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				CAPL sent a follow up asking DoT to confirm that contacts within DoT had been engaged with. DoT confirmed that key contacts had been engaged with.			
Department of Transport (DoT) - Maritime Environmental Emergency Response (MEER) - Marine Pollution (formerly OSRC Unit)	17/08/2023	OC-000735	Email	DoT requested that information as outlined in the DoT Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (July 2020). CAPL sent through consultation information in accordance with the guidance note to DoT.	No objection or claim raised.		
Department of Transport (DoT) - Maritime Environmental Emergency Response (MEER) - Marine Pollution (formerly OSRC Unit)	27/09/2023	OC-000734	Email	DoT requested further information to address the requirements of the Industry Guidance Note and CAPL responded in accordance with DoT's request.	No objection or claim raised.		
Department of Transport (DoT) - Maritime Environmental Emergency Response (MEER) - Marine Pollution (formerly OSRC Unit)	15/12/2023	OC-001031	Email	DoT advised they had reviewed the JIC factsheet and had no further comments.	No objection or claim raised.		
Department of Transport (DoT) - Navigational Safety	05/10/2022	CN-000470	Email	CAPL advised DoT - Navigational Safety 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Department of Transport (DoT) - Navigational Safety	23/03/2023	CN-000127	Email	CAPL sent a formal written notification to DoT 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 provided a link to their website for further information regarding the activity. CAPL notified DoT Navigational Safety that they welcome meaningful feedback. DoT acknowledged receipt of email and would like to be involved in consultation regarding the activity in State Waters.	No objection or claim raised.		
Department of Water & Environmental Regulation (DWER)	05/10/2022	OC-000184	Email	CAPL advised that the DWER 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 DWER that they welcome meaningful feedback.	No objection or claim raised.		
Department of Water & Environmental Regulation (DWER)	15/02/2023	CN-000210	Email	CAPL sent a formal written notification advising DWER 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 DWER that they welcome meaningful feedback	No objection or claim raised.		
Ebb and Flow / Glass Bottom Boats	20/02/2023	CN-000206	Email	CAPL advised Glass Bottom Boats 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 Glass Bottom Boats that they welcome meaningful feedback.	No objection or claim raised.		
Ebb and Flow / Glass Bottom Boats	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Eni Australia	14/02/2023	CN-000190	Email	CAPL advised that Eni Australia 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 Eni Australia that they welcome meaningful feedback. Eni Australia responded that they have received the email and have no concerns regarding the activity at this stage.	No objection or claim raised.		
Environmental Protection Authority (EPA)	08/05/2023	CN-000431	Email	CAPL advised that the EPA 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	It is noted that CAPL is in regular contact with DWER EPA Services, and no additional		

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				provided a link to their website for further information regarding the activity. CAPL notified the EPA that they welcome meaningful feedback. EPA acknowledged the email and did not provide any comments.	feedback has been provided. No changes to the EP or activity were made.		
Exmouth Chamber of Commerce and Industry (ECCI)	20/12/2022	OC-000174	Email	CAPL advised the ECCI had been identified as a relevant person with functions, interests or activities that may be affected by the activity. ECCI were pleased to hear from CAPL for early consultation and relationship building. A meeting was arranged.	No objection or claim raised.		
Exmouth Chamber of Commerce and Industry (ECCI)	05/01/2023	OC-000172	Email	CAPL thanked the ECCI for their time. CAPL requested community engagement group contacts for continued consultation and funding opportunities. ECCI provided details as requested.	No objection or claim raised.		
Exmouth Chamber of Commerce and Industry (ECCI)	05/01/2023	OC-000542	Virtual Meeting	CAPL discussed the upcoming Environment Plan consultation for the activity and CAPL's membership with ECCI had been identified as a relevant person.	No objection or claim raised.		
Exmouth Chamber of Commerce and Industry (ECCI)	24/01/2023	OC-000171	Email	ECCI in partnership with Tourism WA provided CAPL with contacts for relevant persons within the region as well as sponsorship opportunities to support the community.	No objection or claim raised.		
Exmouth Chamber of Commerce and Industry (ECCI)	24/01/2023	OC-000283	Face-to-face	CAPL met with representatives from ECCI in Exmouth. ECCI provided advice on local relevant persons that CAPL should be engaging.	No objection or claim raised.		
Exmouth Chamber of Commerce and Industry (ECCI)	06/02/2023	CN-000110	Email	CAPL sent a follow up email providing an overview of the activity and provided a link to their website for further information regarding the activity. CAPL notified the Exmouth Chamber of Commerce and Industry that they welcome meaningful feedback. ECCI organised for CAPL's activity information to be sent out via the Exmouth Chamber of Commerce EDM.	No objection or claim raised.		
Exmouth Chamber of Commerce and Industry (ECCI)	13/02/2023	OC-000112	Email	CAPL assisted ECCI with first aid training through CAPL's relationship with St John Ambulance. CAPL passed on the email address and contact details for a local company that can run the first aid classes for ECCI.	No objection or claim raised.		
Exmouth Chamber of Commerce and Industry (ECCI)	23/02/2023	OC-000261	Virtual Meeting	CAPL met with the ECCI to understand potential opportunities for engagement and support.	No objection or claim raised.		
Exmouth Chamber of Commerce and Industry (ECCI)	27/02/2023	OC-000299	Phone	CAPL spoke with ECCI about possible sponsorship and engagement opportunities.	No objection or claim raised.		
Exmouth Dive & Whalesharks Ningaloo	09/01/2023	OC-000173	Email	CAPL advised that Exmouth Dive & Whaleshark Ningaloo had been identified. CAPL identified Exmouth Dive & Whaleshark Ningaloo as a relevant person with functions, interests or activities that may be affected by the activity and CAPL contacted them to confirm their contact details for consultation. Exmouth Dive & Whaleshark Ningaloo responded to confirm this.	No objection or claim raised.		
Exmouth Dive & Whalesharks Ningaloo	20/02/2023	CN-000204	Email	CAPL sent a formal written notification advising Exmouth Dive & Whalesharks Ningaloo 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 the Exmouth Dive & Whalesharks Ningaloo that they welcome meaningful feedback.	No objection or claim raised.		
Exmouth Dive & Whalesharks Ningaloo	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Exmouth Dive & Whalesharks Ningaloo	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Exmouth Gulf Task Force - DWER	13/02/2023	CN-000069	Email	CAPL advised that the Exmouth Gulf Task Force 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 the Exmouth Gulf Task Force that they welcome meaningful feedback.	No objection or claim raised.		

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				Exmouth Gulf Task Force acknowledged receipt of email and that the Exmouth Gulf Taskforce will consider this at the next meeting.			
Exmouth Gulf Task Force - DWER	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Exmouth Gulf Task Force - DWER	06/09/2023-06/09/2023	OC-000636	Email	CAPL contacted Exmouth Gulf Task Force to follow up on earlier correspondence to confirm whether there was an interest in meeting to discuss our EP and OPP information. No response was received from Exmouth Gulf Task force and as such consultation was closed out.	No objection or claim raised.		
Exxon Mobil	14/02/2023	CN-000191	Email	CAPL advised that Exxon Mobil 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 Exxon Mobil that they welcome meaningful feedback. CAPL sent a follow up email to confirm whether the email was received.	No objection or claim raised.		
Exxon Mobil	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Gascoyne Development Commission (GDC)	10/01/2023	OC-000104	Email	CAPL advised the GDC had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. GDC would be pleased to meet with CAPL and a meeting was organised.	No objection or claim raised.		
Gascoyne Development Commission (GDC)	09/02/2023	OC-000297	Virtual Meeting	CAPL met with a representative from the GDC to provide an overview of their new approach to consultation along with an update on their Environment Plans. The GDC provided advice on local relevant persons that CAPL should be engaging, including the DoD and the Exmouth Gulf Task Force.	The GDC provided advice on local relevant persons that CAPL should be engaging.	**Claim has merit.** The additional local relevant persons identified by the GDC were identified as relevant stakeholders, and that engagement with these stakeholders is required.	No change made to the EP. Additional engagement with stakeholders identified during consultation were engaged with.
Gascoyne Development Commission (GDC)	09/02/2023	CN-000105	Email	CAPL sent a formal written notification advising GDC 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 the GDC that they welcome meaningful feedback. CAPL thanks GDC for their time, and acknowledged the suggestion to contact the Exmouth Gulf Taskforce, the DoD and Gascoyne Gateway Limited. An additional meeting was organised.	GDC suggested CAPL engage with the Exmouth Gulf Taskforce, the DoD and Gascoyne Gateway Limited.	**Claim has merit.** CAPL acknowledges the additional stakeholders identified by the GDC were identified as potential relevant stakeholders, and that engagement with these stakeholders is required.	No change made to the EP. Additional engagement with stakeholders identified during consultation were engaged with.
Gascoyne Development Commission (GDC)	23/02/2023	OC-000262	Virtual Meeting	CAPL spoke with the GDC to understand potential engagement opportunities. CAPL provided an overview of current activities and clarified any questions posed by the GDC regarding the EMBA. The GDC recommended engagement with Recfishwest.	The GDC recommended engagement with Recfishwest	**Claim has merit.** CAPL acknowledge that GDC identified Recfishwest as a relevant stakeholder, and that engagement with this stakeholder is required.	No change was made to the EP. Additional engagement with stakeholders identified during consultation were engaged with.
Gascoyne Development Commission (GDC)	10/05/2023	OC-000440	Email	CAPL reached out to the GDC to provide any feedback they may have on the activity. CAPL confirmed that the GDC has not expressed specific concerns or objections to the planned activity.	No objection or claim raised.		
Gascoyne Development Commission (GDC)	19/06/2023	OC-000745	Email	GDC advised CAPL that they would promote the Chevron Community Spirit Fund via social media and thanked CAPL for the update of the upcoming OPP. GDC introduced the new CEO of GDC via email. CAPL thanked GDC and responded welcoming the new connection. CAPL advised they were happy to call and talk to the OPP and EPs if GDC wanted over the next few weeks.	No objection or claim raised.		

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Gascoyne Junction Community Resource Centre (GJCRC)	08/02/2023	CN-000228	Email	CAPL advised that the GJCRC 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 the GJCRC that they welcome meaningful feedback.	No objection or claim raised.		
Gascoyne Junction Community Resource Centre (GJCRC)	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Gascoyne Junction Community Resource Centre (GJCRC)	08/11/2023	OB-000918	Phone	CAPL called to close out consultation. GJCRC was not aware of any emails and asked for the email to be resent.	Engagement materials to be provided.	**Claim has merit:** CAPL acknowledge that further engagement is required.	No change made to the EP. CAPL resent the written notice.
Gascoyne Junction Community Resource Centre (GJCRC)	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Greenpeace	10/02/2023	CN-000224	Email	CAPL advised that Greenpeace 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 Greenpeace that they welcome meaningful feedback. CAPL sent a follow up email to confirm whether the email was received.	No objection or claim raised.		
Greenpeace	03/07/2023-21/08/2023	OC-000620	Email	Greenpeace provided confirmation via email to CAPL that emails concerning OPP and EPs had been forwarded to Greenpeace office of the CEO	No objection or claim raised.		
Greenpeace	31/08/2023-31/08/2023	OC-000631	Phone	CAPL contacted Greenpeace by telephone in relation to its current EP's requesting an opportunity to engage with the office of the CEO. Greenpeace Operator advised that she would pass the message on.	No objection or claim raised.		
Greenpeace	06/09/2023-06/09/2023	CN-000639	Email	CAPL contacted Greenpeace requesting opportunity to meet to discuss offshore activities and investments in net zero and lower carbon operations.	No objection or claim raised.		
Greenpeace	04/10/2023-04/10/2023	OC-000816	Email	Greenpeace confirmed opportunity to speak with their CEO via email and offered virtual or in person meeting .	No objection or claim raised.		
Greenpeace	04/10/2023-04/10/2024	OC-000817	Email	CAPL responded to Greenpeace to confirm availability to meet virtually and in person.	No objection or claim raised.		
Greenpeace	07/11/2023	OC-000905	Email	CAPL followed up asking if Greenpeace were available to meet next week.	No objection or claim raised.		
Greenpeace	23/11/2023	OB-000943	Email	Greenpeace provided feedback regarding CAPL activities. Greenpeace requested all consultation be conducted in writing but would like to have the CEO of Greenpeace and CAPL meet and discuss future business. Greenpeace requested confirmation that Greenpeace is considered to be a 'relevant person' on the Plans, and requested further information on the following: • Detailed information about how the greenhouse gas emissions fit within state and national carbon budgets • Detailed information about what steps have been taken to fully mitigate the greenhouse gas emissions generated by the activities • Detailed information about what steps have been taken to fully mitigate any potential impacts on marine fauna or protected areas • Full text copies of modelling commissioned to support the Plans, such as acoustic or water turbidity modelling • Detailed information about worst case scenario hydrocarbon spill scenarios considered, full text copies of hydrocarbon spill modelling and detailed information about what steps have been taken to fully mitigate any potential impacts on marine fauna or protected areas	Greenpeace requested further engagement to discuss CAPL activities and further information.	**Claims have merit:** As a relevant person, the request for further information and engagement is considered fair and reasonable.	No change made to the EP. Further engagement with Greenpeace has taken place, and information was provided on all points raised. Engagement with Greenpeace is ongoing.
Greenpeace	04/12/2023-04/12/2023	OC-000964	Email	CAPL provided a response to Greenpeace. CAPL confirmed that Greenpeace remains a 'relevant person', and provided further information on all points raised by Greenpeace. Greenpeace thanked CAPL for its email responding to GP's email from the 23 November 2023 and discussed reaching out in early 2024 to set up meeting with CAPL MD with GP CEO	No objection or claim raised.		

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Image Dive and Charters	04/05/2023	CN-000393	Email	CAPL advised that Image Dive and Charters 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 Image Dive and Charters that they welcome meaningful feedback.	No objection or claim raised.		
Image Dive and Charters	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Image Dive and Charters	08/11/2023	OC-000925	Phone	CAPL called the stakeholder to close out consultation regarding CAPL activities. Image Dive and charters stated they did not have any comments and would prefer email notifications for future correspondence.	No objection or claim raised.		
Image Dive and Charters	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
International Fund for Animal Welfare (IFAW) - Oceania	10/02/2023	CN-000377	Email	CAPL advised that the IFAW 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 IFAW that they welcome meaningful feedback. CAPL sent a follow up email to confirm whether the email was received.	No objection or claim raised.		
International Fund for Animal Welfare (IFAW) - Oceania	13/03/2023	OB-000380	Email	IFAW emailed CAPL regarding significant concerns about the impact of oil and gas exploration on the marine environment, particularly in regards to seismic testing and its harmful impacts on whales. IFAW would like to see the development of quieter alternatives to seismic airguns to reduce underwater noise pollution and a moratorium on any further seismic surveying in Biologically Important Areas at times when whales are present in these areas. CAPL thanked IFAW for the email and for highlighting their concerns. CAPL advised that 4D Marine Seismic Surveys (MSS) are undertaken to acquire data that is compared to previously acquired 3D MSS. There are currently no suitable alternatives to an air gun array that would achieve the objectives of the Wheatstone 4D Marine Seismic Survey. With respect to the timing, for a 4D MSS to be successful, acquisition parameters and ambient environmental conditions (e.g. currents, water temperature, swell etc.) need to be the same as the previous 3D MSS. The previous 3D MSS was acquired mid-November 2011 to mid-April 2012. The selected window for the 4D MSS acquisition is therefore similar. The reason for the Wheatstone 4D MSS starting in January rather than November is to limit the overlap with the predicted Pygmy Blue Whale migration timings. CAPL commissioned acoustic modelling for the Wheatstone 4D MSS to inform the environmental risk assessment for the activity and commits to the implementation of EPBC Policy Statement 2.1 - Interaction between offshore seismic exploration and whales. In addition, CAPL will ensure the activity is conducted in a manner that is consistent with management action A.2.3 of the Blue Whale Conservation Management Plan: “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 foraging area".	1 IFAW raised significant concerns about the impact of oil and gas exploration on the marine environment, particularly in regards to seismic testing and its harmful impacts on whales. 2 IFAW would like to see the development of quieter alternatives to seismic airguns to reduce underwater noise pollution and a moratorium on any further seismic surveying in Biologically Important Areas at times when whales are present in these areas. 3 IFAW raised impact of seismic testing on fisheries and the marine environment	**1 Claim has merit:** CAPL acknowledge concerns raised regarding the impact of oil and gas exploration to the marine environment. **2 & 3 Claims do not have merit:** While CAPL acknowledges the IFAW's objections and concerns regarding seismic activities, they are out of scope for this activity.	No change made to the EP. The EP includes a description of the existing environment (Section 4) and a risk assessment (Section 7) to address impacts and risks to the marine environment, including a demonstration that risks are of a defined acceptable level. CAPL provided a response to IFAW on the concerns raised.
Jadestone Energy	14/02/2023	CN-000189	Email	CAPL advised that Jadestone Energy 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 Jadestone Energy that they welcome meaningful feedback. CAPL sent a follow up email to confirm whether the email was received.	No objection or claim raised.		
Jadestone Energy	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Jadestone Energy	08/11/2023	OC-000919	Phone	CAPL called to close out consultation. Jadestone did not answer, and no voicemail option was available.	No objection or claim raised.		

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Jadestone Energy	23/11/2023	OC-000961	Email	CAPL sent a final close out email stating they have made several attempts to make contact via email / telephone regarding the opportunity to consult on our proposed activities. To date CAPL have not received a reply from the organisation. CAPL would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Karratha & Districts Chamber of Commerce and Industry (KDCCI)	22/12/2022	OC-000115	Email	CAPL advised the KDCCI had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. KDCCI acknowledged and appreciated CAPL reaching out and a meeting was organised. CAPL provided a link to their website for further information regarding the activity.	No objection or claim raised.		
Karratha & Districts Chamber of Commerce and Industry (KDCCI)	31/01/2023	OC-000288	Face-to-face	CAPL met with KDCCI in Karratha. CAPL provided an overview of their new approach to consultation along with an update on their Environment Plans. KDCCI offered to share CAPL's information sheet with their members.	No objection or claim raised.		
Karratha & Districts Chamber of Commerce and Industry (KDCCI)	13/02/2023	CN-000410	Email	CAPL advised the KDCCI had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. KDCCI acknowledged and appreciated CAPL reaching out and a meeting was organised. CAPL provided a link to their website for further information regarding the activity.	No objection or claim raised.		
Karratha & Districts Chamber of Commerce and Industry (KDCCI)	13/02/2023	OC-000304	Phone	CAPL spoke with KDCCI regarding details of CAPL's advert to include in the KDCCI newsletter.	No objection or claim raised.		
Karratha & Districts Chamber of Commerce and Industry (KDCCI)	22/02/2023	OC-000117	Email	KDCCI advertised CAPL's Environment Plan information sheet in their newsletter.	No objection or claim raised.		
Karratha & Districts Chamber of Commerce and Industry (KDCCI)	03/03/2023	OC-000520	Email	KDCCI offered the opportunity for CAPL to present to their board regarding the upcoming activities. A time was organised.	No objection or claim raised.		
Karratha & Districts Chamber of Commerce and Industry (KDCCI)	16/05/2023	OC-000534	Virtual Meeting	CAPL presented to the KDCCI board on CAPL's upcoming activities. The KDDCI board confirmed CAPL's Environment Plan information was shared via email to their membership on CAPL's behalf in February. No feedback, objections or claims were raised.	No objection or claim raised.		
Karratha Tourism and Visitor Centre	08/02/2023	CN-000231	Email	CAPL advised that the Karratha Visitor Centre 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 the Karratha Visitor Centre that they welcome meaningful feedback.	No objection or claim raised.		
Karratha Tourism and Visitor Centre	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Kato Energy / Kato NWS Pty Ltd	14/02/2023	CN-000216	Email	CAPL advised that Kato Energy 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 Kato Energy that they welcome meaningful feedback.	No objection or claim raised.		
Kato Energy / Kato NWS Pty Ltd	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Kato Energy / Kato NWS Pty Ltd	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority	No objection or claim raised.		

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				(NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.			
Kufpec	14/02/2023	CN-000417	Email	CAPL advised that Kufpec 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 Kufpec that they welcome meaningful feedback.	No objection or claim raised.		
Kufpec	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Live Ningaloo	09/01/2023	OC-000181	Email	CAPL advised that Live Ningaloo had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL confirmed contact details for future consultation.	No objection or claim raised.		
Live Ningaloo	20/02/2023	CN-000201	Email	CAPL sent a formal written notification advising Live Ningaloo 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 Live Ningaloo that they welcome meaningful feedback.	No objection or claim raised.		
Live Ningaloo	11/05/2023	OC-000444	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email.	No objection or claim raised.		
Mackerel Islands & Onslow Beach Resort	05/10/2022	CN-000536	Email	CAPL advised Mackerel Islands & Onslow Beach Resort 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Mackerel Islands & Onslow Beach Resort	20/02/2023	CN-000207	Email	CAPL sent a formal written notification advising Mackerel Islands & Onslow Beach Resort 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 the Mackerel Islands & Onslow Beach Resort that they welcome meaningful feedback.	No objection or claim raised.		
Mackerel Islands & Onslow Beach Resort	09/11/2023	OC-000926	Email	Mackerel Islands responded that they had no comments regarding the Gorgon Umbilical and JIC Installation EPs.	No objection or claim raised.		
Mahi Mahi Charters	05/10/2022	CN-000536	Email	CAPL advised Mahi Mahi Fishing Charters 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Mahi Mahi Charters	04/05/2023	CN-000394	Email	CAPL sent a formal written notification advising Mahi Mahi Fishing Charters 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 Mahi Mahi Fishing Charters that they welcome meaningful feedback.	No objection or claim raised.		
Mahi Mahi Charters	08/11/2023	OB-000923	Phone	CAPL called Mahi Mahi to close out consultation regarding CAPL activities. The voicemail advised that the stakeholder office was closed till end of December. CAPL left a message confirming a close out email would be sent through	No objection or claim raised.		
Mahi Mahi Charters	29/11/2023	OC-000961	Email	CAPL sent a final close out email stating they have made several attempts to make contact via email / telephone regarding the opportunity to consult on our proposed activities. To date CAPL have not received a reply from the organisation. CAPL would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Maxima Pearling Company	04/05/2023	CN-000430	Email	CAPL advised that Maxima Pearling Company 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 the Maxima Pearling Company that they welcome meaningful feedback.	No objection or claim raised.		

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				Maxima Pearling Company stated that pearling leases and holding sites occur within the identified area. A phone call was organised.			
Maxima Pearling Company	09/05/2023	OC-000425	Virtual Meeting	CAPL presented to Maxima Pearling in relation to our upcoming offshore activities. Maxima Pearling have Edible Rock Oyster Aquaculture sites at West Lewis Islands, Flying Foam Passage, Withnell Bay and Cossack. Maxima Pearling have no objections to the activities proposed, but they would like to be notified in the event of an emergency. Maxima Pearling advised reaching out to Paspaley Pearls, Cygnet Bay and McGowans as potential relevant persons.	1. Maxima Pearling have no objections to the activities proposed, but they would like to be notified in the event of an emergency. 2. Suggested engaging with Paspaley Pearls, Cygnet Bay and McGowan.	**Claim has merit:** Pearling Company has leases within the EMBA thus are considered relevant and their request for a notification in the event of an emergency is appropriate.	Table 8-5 and Section 8.3.4.2 in the EP have been revised to include incident notifications to relevant persons. Additional engagement with stakeholders identified during consultation were engaged with.
Member for Pilbara	08/02/2023	CN-000122	Email	CAPL advised the Member for Pilbara 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 the Member for Pilbara that they welcome meaningful feedback. A meeting was organised.	No objection or claim raised.		
Member for Pilbara	20/02/2023	OC-000257	Virtual Meeting	CAPL met with the Member of the Pilbara. The Member of the Pilbara showed support for CAPL's activities and a keen interest in employment opportunities in the Pilbara.	No objection or claim raised.		
Member for Pilbara	11/05/2023	OC-000506	Email	CAPL thanked the Member of Pilbara for their engagement and support in 2023. CAPL asked if there had been any comments or feedback from the community with respect to CAPL activities and reiterated the opportunity to catch up in the near future to provide the Member of Pilbara with an overview of the extent of CAPL's consultations and how CAPL will continue to build relationships in the Pilbara.	No objection or claim raised.		
Member of Legislative Authority (MLA) - North West Central	08/02/2023	CN-000240	Email	CAPL advised that MLA 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 the MLA that they welcome meaningful feedback.	No objection or claim raised.		
Member of Legislative Authority (MLA) - North West Central	10/05/2023	OC-000513	Email	CAPL sent a follow up email to the MLA regarding CAPL's upcoming activities as a relevant person with interests and functions in the region. No response was received from the MLA, CAPL informed the MLA that if they have any input on the proposed activities to please contact CAPL.	No objection or claim raised.		
Member of Legislative Authority (MLA) - North West Central	23/11/2023	OC-000961	Email	CAPL sent a final close out email stating they have made several attempts to make contact via email / telephone regarding the opportunity to consult on our proposed activities. To date CAPL have not received a reply from the organisation. CAPL would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Member of Mining and Pastoral Region	19/12/2022	OC-000406	Email	CAPL advised the Representative from the Member for Mining and Pastoral Region had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL requested to organise a meeting to discuss the activity and agree on communication protocols for consultation. A meeting was organised.	No objection or claim raised.		
Member of Mining and Pastoral Region	08/02/2023	CN-000408	Email	CAPL sent a formal written notification advising the f Member of Mining and Pastoral Region 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 the Representative from the Member of Mining and Pastoral Region that they welcome meaningful feedback.	No objection or claim raised.		
Member of Mining and Pastoral Region	09/02/2023	OC-000298	Virtual Meeting	CAPL met with a representative from the Members for Mining and Pastoral Region to provide an overview of CAPL's new approach to consultation along with an update on CAPL's Environment Plans. The Members for Mining and Pastoral Region provided advice on local relevant persons that CAPL should be engaging. The representative from the Members for Mining and Pastoral Region suggested reaching out to the Exmouth Gulf Task Force.	Suggested engaging with the Exmouth Gulf Task Force.	**Claim has merit:** CAPL acknowledges the additional stakeholder identified are potential relevant persons, and that engagement with this stakeholder is required.	No change made to the EP. Additional engagement with stakeholders identified during consultation were engaged with.
Member of Mining and Pastoral Region	16/02/2023	OC-000407	Email	CAPL thanked the representative from the Member for Mining and Pastoral Region for the opportunity to speak about CAPL's Environment Plans and to contact CAPL if they have additional questions about the information shared.	No objection or claim raised.		
Member of Mining and Pastoral Region	11/05/2023	OC-000507	Email	CAPL thanked the Member of Mining and Pastoral Region for their engagement and support in 2023. CAPL asked if there had been any comments or feedback from the community with respect to CAPL activities and reiterated the opportunity to catch up in the near future to provide the Member of Pilbara with an overview of the extent of CAPL's consultations and how CAPL will continue to build relationships in the Pilbara.	No objection or claim raised.		
Member of the Public	24/02/2023	CN-000488	Phone	The member of the public called the CAPL 1800 phone number. CAPL returned the call in the afternoon of the 24 February 2023. The member of the public said the newspaper ad told her to call CAPL and the member of the public	No objection or claim raised.		

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				did not have any specific concerns related to CAPL's proposed activities. The member of the public did not wish to be a relevant person to the EP for consultation under regulation 11A(1).			
Minister for Environment	13/02/2023	CN-000511	Email	CAPL advised that the Minister for Environment 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 the Minister for Environment that they welcome meaningful feedback.	No objection or claim raised.		
Minister for Environment	10/05/2023	OC-000514	Email	CAPL reached out to the Minister of Environment to provide any feedback they may have on the activity. CAPL informed the Minister of Environment that if they have any questions or would like further details on how CAPL has engaged Traditional Owners, Community and Industry through the consultation process to please reach out. The Minister of Environment responded that they request future consultation of planned activities is copied to DWER and DBCA.	Request that future consultation of planned activities is copied to the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions respectively at info@dwer.wa.gov.au and enquiries@dbca.wa.gov.au.	**Claims have merit:** In accordance with the activity Risk Assessment, Chevron acknowledge that emergency conditions or unplanned incidents pose a risk to Western Australia's environment and as such the request to notify DBCA or DWER for future activities is considered appropriate. As DWER and DBCA are considered relevant stakeholders, Chevron engaged with them accordingly.	No change made to the EP. Additional engagement with stakeholders identified during consultation were engaged with.
Montebello Island Safaris	05/10/2022	CN-000536	Email	CAPL advised Montebello Island Safaris 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Montebello Island Safaris	04/05/2023	CN-000395	Email	CAPL sent a formal written notification advising Montebello Island Safaris 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 the Montebello Island Safaris that they welcome meaningful feedback.	No objection or claim raised.		
Montebello Island Safaris	08/11/2023	OC-000921	Phone	CAPL called to close out consultation. The stakeholder was not aware of any emails and asked for the email to be resent. CAPL confirmed they would send out a close out email and would welcome feedback for future engagement but specified the EP consultation window was closed.	Engagement materials to be provided.	**Claim has merit:** CAPL acknowledge that further engagement is required.	No change made to the EP. CAPL resent the written notice.
Montebello Island Safaris	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Murujuga Aboriginal Corporation	06/01/2023	OC-000277	Face-to-face	CAPL established contact with Murujuga Aboriginal Corporation (MAC) to organise a time to provide an overview of upcoming projects and discuss preferred methods of communication.	No objection or claim raised.		
Murujuga Aboriginal Corporation	09/01/2023	OC-000309	Email	CAPL thanked Murujuga Aboriginal Corporation (MAC) for their time. CAPL organised another time to meet with the CEO of MAC and discuss CAPL's upcoming Environment Plans. A meeting was organised.	No objection or claim raised.		
Murujuga Aboriginal Corporation	03/02/2023	CN-000251	Email	CAPL identified the MAC as a Traditional Owner group and provided an overview of upcoming activities and Environment Plans. MAC advised that they had no concerns or objections with respect to upcoming offshore activities.	No objection or claim raised.		
Murujuga Aboriginal Corporation	01/03/2023	OC-000310	Face-to-face	CAPL met with the MAC to discuss current ongoing projects, developments and goals from both organisations. CAPL requested advice from the Board on whether there were cultural values and sensitivities within the EMBA that could be impacted in the case of an event. requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. MAC did not identify any additional relevant persons to consult.	No objection or claim raised.		
Murujuga Aboriginal Corporation	06/06/2023	OC-000777	Email	CAPL followed up with MAC regarding EP submission to NOPSEMA. CAPL emailed to confirm no further claims or objections with respect to the EPs had arisen to MAC. Additional, CAPL informed them of activity factsheet being sent out soon.	No objection or claim raised.		
Murujuga Aboriginal Corporation	07/08/2023-07/08/2023	OC-000601	Email	CAPL extended solicitation of EOI for MAC to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with MAC further.	No objection or claim raised.		

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Murujuga Aboriginal Corporation	08/08/2023	OC-000779	Email	MAC enquired regarding costs for the ranger program. CAPL responded.	No objection or claim raised.		
Murujuga Aboriginal Corporation	24/10/2023	OC-000860	Phone	MAC advised that the MAC board was currently preparing a letter to provide to proponents with respect to cultural authority. MAC also intending to provide members with information and protocol on sharing cultural information publicly.	No objection or claim raised.		
Murujuga Aboriginal Corporation				To summarise consultation with MAC to date: • CAPL commenced consultation with MAC on 6th January 2023 with an introductory email and link to the Consultation Hub on CAPL's website • CAPL has met with MAC representatives in 2 face-to-face meetings and maintained contact through email and telephone correspondence • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • CAPL has considered feedback provided by MAC during consultation, including information on MAC's functions, interests and activities within the EMBA and all claims raised have been addressed • MAC has not raised any further objections or claims relating to the activity scope as CAPL has provided a reasonable period and sufficient information to MAC 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 11A. CAPL will continue to engage MAC as part of its ongoing consultation as outlined in Section 8.3.4.1 of the EP			
Nganhurra Thanardi Garrbu Aboriginal Corporation	03/02/2023	CN-000319	Email	CAPL advised that the Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) 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 NTGAC that they welcome meaningful feedback. A representative for NTGAC contacted CAPL to identify prerequisites to consultation prior to the board meeting with NTGAC. CAPL responded to the request and outlined the overview of CAPL's goals for continued future consultation.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	28/02/2023	OC-000320	Email	CAPL originally engaged NTGAC regarding the Gorgon and Jansz wellhead decommissioning activity. NTGAC contacted CAPL to request additional information. NTGAC offered CAPL to present an overview of their upcoming activities to their board. CAPL engaged with NTGAC with information responding to NTGACs queries and confirmed that they would present to the NTGAC board of Directors. A confirmation of meeting date and attendance ensued.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	09/03/2023	OC-000563	Face-to-face	CAPL met with NTGAC Board in Carnarvon to present its Environment Plans and discuss unplanned risks and impacts and identify feedback on areas of significance and cultural values including sea country and underwater cultural heritage. CAPL spent considerable time explaining the approvals process and offered support to NTGAC to engage an independent environmental specialist to review the information sheets for our activities. CAPL requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. NTGAC did not identify any additional relevant persons to consult. CAPL requested advice from NTGAC Board on whether there were cultural values and sensitivities within the EMBA that could be impacted in the case of an event. CAPL also requested advice from NTGAC Board as to whether there were other Relevant Persons that CAPL should contact as part of this process. CAPL offered to spend more time with NTGAC Board if necessary to both help to build the relationship but to also understand values and sensitivities.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	13/03/2023	OC-000564	Email	CAPL wrote to NTGAC thanking them for their time and opportunity to present at the NTGAC Board Meeting in Carnarvon on the 9th of March 2023. CAPL reiterated the NOPSEMA process and key timeframes for submission, as well as information that CAPL required as part of the consultation process.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	03/04/2023	OC-000317	Email	CAPL contacted NTGAC to discuss whether any objections or claims were raised after their presentation to the Board. CAPL welcomed the opportunity to discuss any further queries and	No objection or claim raised.		

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				attend future board meetings. NTGAC advised that the board were agreeable to future consultation and meetings with CAPL.			
Nganhurra Thanardi Garrbu Aboriginal Corporation	03/04/2023	OC-000318	Email	NTGAC contacted CAPL to request further information about the Environment Plans and upcoming activities. CAPL responded and provided the requested information.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	04/04/2023	OC-000243	Email	CAPL accepted invitation from the NTGAC board to meet with the board on September 5 in Exmouth.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	09/05/2023	OC-000419	Phone	CAPL attempted to call NTGAC. There was no answer so CAPL left a message to call back	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	09/05/2023	OB-000541	Email	CAPL advised NTGAC that they had tried to contact them by phone and left a voicemail regarding their last communication in April. CAPL informed NTGAC that they are looking to finalise the Environment plans and noted that they had not received any feedback from NTGAC. CAPL acknowledged the heavy workload NTGAC is facing and wanted to reiterate their intentions to develop a communication protocol with NTGAC moving forward at NTGAC's convenience. CAPL acknowledged the importance of coastal areas, sea country and adjacent Islands as highly valuable to the NTGAC and other Aboriginal Corporations and understand the impact on these areas from planned or unplanned events which may cause harm to the cultural landscape, individuals, and community. CAPL informed NTGAC of their commitment to developing a relationship and participating in ongoing consultations with NTGAC about the activities that are completed offshore. CAPL informed NTGAC that no planned activities will impact the Native Title. CAPL confirmed their attendance for the Board meeting scheduled in September and reiterated their intentions to further discuss and update the Board on the status of the submitted Environment Plans and commencement of activities. CAPL offered to discuss any issues further at NTGACs convenience.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	12/06/2023-22/06/2023	OC-000576	Email	YMAC presented their draft consultation framework to CAPL. CAPL thanked YMAC/NTGAC for their time and acknowledged that CAPL are currently collaborating with a number of other PBC's to develop a plan around developing and managing our relationship and opportunities for collaboration so look forward to being able to do this with NTGAC as well. These plans are progressing well, and we hope to finalise a number of them in the coming weeks. CAPL provided initial thoughts and feedback: – CAPL would like to build a relationship. CAPL understand NTGAC are limited with time, however, CAPL would like to be able to discuss opportunities to meet NTGAC outside of consultations so that we can build and develop our relationship. The discussions with other PBC's are focused on creating what we are referring to as an "Engagement Plan" where we build events and activities in throughout the year. CAPL's position on creating an Engagement Plan is that it is an opportunity for us to build a long-term, enduring relationship based on trust and understanding. CAPL would like to be in a position where we can sit down with NTGAC to show our planned activities, i.e., occurring over the next 12-18 months, that require consultation, so that we can effectively plan future engagements with NTGAC. Through this process and as NTGAC's fluency for offshore activities increase, it might mean that there are other ways for us to engage, which could possibly take pressure off your board meetings or enable information to be more easily shared with members. CAPL understand that the draft is generalised in nature, hence it is meant for many different proponents, however our consultation framework will need to be developed on the basis that our planned activities are offshore and there are no proposed activities or operations on the NTGAC determination. From a consultation perspective, CAPL's focus is on sharing how we prevent and mitigate unplanned risks and impacts in the draft consultation guideline.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	13/06/2023-27/06/2023	OC-000575	Email	CAPL reached out to NTGAC to confirm when they are expecting to engage an environmental specialist to review CAPL's offshore activity information sheet. NTGAC confirmed they have engaged an environmental specialist and YMAC confirmed the proposed consultation framework will be placed on hold pending the outcome of the review from the environmental specialist. CAPL reiterated they would like to build a relationship with NTGAC based on co-design that shapes	No objection or claim raised.		

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				how CAPL present information to NTGAC going forward and would be grateful if the proceed with the environmental specialist could continue in parallel with CAPL's continued consultation.			
Nganhurra Thanardi Garrbu Aboriginal Corporation	21/06/2023	OC-000565	Phone	CAPL contacted NTGAC via YMAC Legal Representative, responding to correspondence received from YMAC in relation to the development of a framework for ongoing consultation. YMAC requested CAPL provide initial feedback on the draft provided. CAPL confirmed desire to meet with NTGAC and YMAC to develop a framework for consultation.	YMAC requested CAPL provide initial feedback on the draft provided.	**Claim has merit:** As a relevant stakeholder, CAPL has a responsibility to engage with relevant persons in a manner that allows meaningful two-way communication.	Ongoing engagement with NTGAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and NTGAC, and once finalised will be implemented.
Nganhurra Thanardi Garrbu Aboriginal Corporation	30/06/2023-30/06/2023	OC-000572	Phone	CAPL had phone discussion with NTGAC with respect to developing engagement framework for ongoing consultation and relationship development.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	06/07/2023-06/07/2023	OC-000578	Face-to-face	CAPL and NTGAC discussed the engagement plan for continued consultation. CAPL also requested to engage more broadly than just at the NTGAC board meeting.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	21/07/2023-21/07/2023	OC-000585	Email	NTGAC (via YMAC) wrote to CAPL to advise that the NTGAC board do not wish to be consulted EP to EP and wish to develop a consultation framework with CAPL.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	31/07/2023-31/07/2023	OC-000587	Email	NTGAC advised that the board do not wish to be consulted EP by EP, and as such the independent environmental specialist has not been engaged. CAPL acknowledged this confirmation.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	07/08/2023-07/08/2023	OC-000600	Email	CAPL extended solicitation of EOI for NTGAC to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with NTGAC further.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	21/08/2023-21/08/2023	OC-000621	Email	NTGAC advised CAPL that it had scheduled a half day workshop to discuss engagement plan with the NTGAC board on 28 September 2023 in Perth. CAPL accepted invitation. NTGAC reiterated that the NTGAC board has advised that EP by EP consultation is not working. It is inefficient, burdensome and highly technical, given they lack the resources, understanding and ability to provide meaningful feedback when consultation is done by individual EPs.	YMAC raised need to discuss and finalise the YMAC consultation framework to ensure meaningful feedback can be provided.	**Claim has merit** As NTGAC/YMAC are relevant persons, and as such it is reasonable and appropriate to facilitate meaningful feedback through the YMAC consultation framework.	Ongoing engagement with NTGAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and NTGAC, and once finalised will be implemented.
Nganhurra Thanardi Garrbu Aboriginal Corporation	11/09/2023-11/09/2023	OC-000641	Face-to-face	CAPL met with YMAC representatives on behalf of NTGAC. Focused discussion on draft engagement plan in preparation for meeting with NTGAC board on 28 September 2023. CAPL confirmed with NTGAC that this workshop was for the purposes of co-designing future consultation and the development of the relationship, not consultation. NTGAC confirmed that they are not comfortable with complete reporting of all correspondence within the body of the EP. NTGAC advised that they want to be able to stipulate the information that is available to the public and what remains accessible only to NOPSEMA in the sensitive information report. CAPL confirmed that any information NTGAC did not want to be made publicly available will only be provided to NOPSEMA in the sensitive information report.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	12/09/2023-12/09/2023	OC-000642	Email	CAPL provided with a copy of the draft engagement plan to NTGAC which had been discussed at the meeting on 11 September 2023. CAPL requested copy of draft agenda for 28 September 2023 workshop focused on co-designing future consultation and the development of the relationship with the NTGAC board.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	18/09/2023-18/09/2023	OC-000663	Email	NTGAC provided a proposed agenda for workshop on 28 September to co-design engagement plan for developing the relationship with CAPL. NTGAC provided a copy of NTGAC's strategic plan for CAPL's review and preparation.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	28/09/2023-28/09/2023	OC-000760	Face-to-face	CAPL met with representatives and discussed key terms of the consultation agreement. NTGAC provided feedback on: • Key terms of our consultation agreement • General report which NTGAC would like for the phase or project • Feedback from the board on what will help them going forward with consultation • Engagement Plan • Partnership / Benefits discussion. CAPL and NTGAC agreed next steps include: • Finalise terms for consultation • NTGAC to provide draft engagement/consultation letter • Board to finalise what ongoing consultation looks like.	The need to finalise consultation framework was raised to ensure meaningful feedback can be provided.	**Claim has merit:** As a relevant stakeholder, CAPL has a responsibility to engage with relevant persons in a manner that allows meaningful two-way communication.	Ongoing engagement with NTGAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and NTGAC, and once finalised will be implemented.

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Nganhurra Thanardi Garrbu Aboriginal Corporation	28/09/2023-28/09/2023	OC-000762	Email	CAPL thanked NTGAC for the opportunity to meet with the NTGAC Board and provided copies of information shared at the meeting, including draft engagement plan, NOPSEMA Consultation Guidelines and proposed next step for formalising an agreement for ongoing consultation.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation	30/10/2023-30/10/2023	OC-000873	Phone	CAPL left voicemail with NTGAC to follow up progress following meeting with board.	No objection or claim raised.		
Nganhurra Thanardi Garrbu Aboriginal Corporation				To summarise consultation with NTGAC to date: • CAPL commenced consultation with NTGAC on 30th February 2023 with an introductory email and link to the Consultation Hub on CAPL's website • CAPL has met with NTGAC representatives in 2 face-to-face meetings and maintained contact through email and telephone correspondence • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • CAPL has considered feedback provided by NTGAC during consultation, including information on NTGAC's functions, interests and activities within the EMBA and all claims raised have been addressed • On 15th May 2023, CAPL emailed NTGAC with a summary of the outcomes of consultation undertaken to date • NTGAC has not raised any further objections or claims relating to the activity scope as CAPL has provided a reasonable period and sufficient information to NTGAC 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 11A. CAPL will continue to engage NTGAC as part of its ongoing consultation as outlined in Section 8.3.4.1 of the EP.			
Ngarluma Aboriginal Corporation RNTBC	14/12/2022	OC-000342	Email	CAPL engaged with Ngarluma Aboriginal Corporation (NAC) as an opportunity to consult on upcoming activities as a relevant person. NAC and CAPL organised a meeting to discuss and gather a more in depth understanding of the activities.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	02/02/2023	OC-000340	Face-to-face	CAPL met with NAC as an identified relevant person and provided an overview of their activities. NAC suggested CAPL present to their board in February and to reconnect when they are next back in the region.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	03/02/2023	CN-000343	Email	CAPL advised that the NAC 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 NAC that they welcome meaningful feedback.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	10/02/2023	OC-000345	Email	CAPL engaged with NAC to set up a meeting to present activities to the NAC board.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	10/03/2023	OC-000344	Email	CAPL attempted to contact NAC and receive feedback from previous meeting.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	29/03/2023	OC-000346	Email	CAPL informed NAC of their travel plans and presentation to the board. NAC confirmed time and date and gave CAPL additional information for CAPLs process and procedures.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	04/04/2023	OC-000241	Phone	CAPL contacted NAC to confirm attendance at the Board Meeting scheduled in April to discuss CAPL's upcoming activity. CAPL requested NAC to provide names of meeting attendees.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	26/04/2023	OC-000355	Face-to-face	CAPL presented to NAC on upcoming EP development. CAPL sought feedback on areas of significance and cultural values including sea country and underwater cultural heritage. CAPL requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. NAC did not identify any additional relevant persons to consult.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	27/04/2023	OC-000530	Email	CAPL contacted NAC regarding feedback following the board meeting. CAPL identified the importance of NAC values and sensitivities and thanked the board for the opportunity to engage. CAPL listed and outlined the important take aways from the meeting and informed NAC to identify any missing information. CAPL requested another meeting to discuss other opportunities.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	19/06/2023-12/07/2023	OC-000782	Email	CAPL and NAC organised a meeting to discuss programs, EP and OPP.	No objection or claim raised.		

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Ngarluma Aboriginal Corporation RNTBC	04/08/2023-04/08/2023	OC-000591	Face-to-face	CAPL met with NAC to provide an update on current EP's, OPP and relationships development. NAC proposed the formation of a working group to discuss consultations in the future. NAC stated that offshore islands are significant to NAC.	NAC raised the significance of offshore islands.	**Claim has merit:** As a relevant person, NAC have provided an understanding of the values that are important to their functions, interests and activities. These must be considered to understand values and sensitivities potentially impacted by the activity scope.	EP was revised to include Table 4-15, which includes specific responses from First Nations consultation in regards to cultural values or features.
Ngarluma Aboriginal Corporation RNTBC	04/08/2023	OC-000609	Email	NAC provided a hard copy of a letter from NAC CEO to CAPL CEO requesting opportunity to consult over Chevron's decommissioning plans.	NAC requested opportunity to consult over Chevron's decommissioning plans.	**Claim doesn't have merit:** The claims to consult were in regards to other EPs (CAPL Decommissioning EPs), and as such are not relevant to this activity.	
Ngarluma Aboriginal Corporation RNTBC	07/08/2023-07/08/2023	OC-000595	Email	CAPL extended solicitation of EOI for NAC to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with NAC further.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	08/08/2023	OC-000611	Phone	NAC contacted CAPL following meeting in Karratha on 04 August 2023 to discuss the creation of a NAC CAPL working group. NAC advised that they would be sending a draft budget for CAPL to incorporate into the draft engagement plan. NAC would like to provide this to the NAC board at the August 2023 meeting.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	08/08/2023	OC-000783	Email	CAPL followed up with an email outlining notes from the face-to-face meeting. CAPL advised that they would like to confirm board meeting for attendance.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	12/09/2023-12/09/2023	OC-000643	Email	CAPL provided NAC with draft engagement plan as requested and sought confirmation on presentation at October board meeting.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	18/09/2023-12/10/2023	OB-000842	Email	CAPL and NAC discussed the draft engagement plan and discussed the potential for a workshop to discuss future activities.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	21/09/2023-21/09/2023	OC-000720	Email	CAPL confirmed receipt of email from NAC providing budget for ongoing consultation and dates for the CAPL NAC working group to meet to consult on CAPL activities. CAPL requested confirmation of date in October 2023. CAPL advised that it would review the budget and revert as soon as possible.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	19/10/2023-19/10/2023	OC-000845	Phone	NAC contacted CAPL to thank CAPL for provision of draft engagement agreement. They will provide comments and further opportunity to meet in Karratha. CAPL advised that they would like to spend time with working group as part of a scene setting exercise before meeting to discuss new EPs in 2024.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	22/10/2023	OC-000862	Email	CAPL enquired to set up some time with NAC to meet.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	30/10/2023-30/10/2023	OC-000875	Email	NAC emailed CAPL with comments attached to draft Consultation Meeting Protocol. NAC advised that details for next meeting will be available shortly.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	03/11/2023-03/11/2023	OC-000896	Phone	NAC contacted CAPL to invite to meeting with NAC board in KTA on 13 November. CAPL accepted invitation.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC	17/11/2023-17/11/2023	OC-000929	Email	CAPL emailed NAC working group to provide copies of documents provided at in person meeting in Karratha on 13 November 2023. CAPL requested opportunity to meet with the NAC working group in March 2024 to consult on Gorgon Revision and JIC Operations EP.	No objection or claim raised.		
Ngarluma Aboriginal Corporation RNTBC				To summarise consultation with NAC to date: • CAPL commenced consultation with NAC on 14th December 2022 with an introductory email and link to the Consultation Hub on CAPL's website			

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				• CAPL has met with NAC representatives in 3 face-to-face meetings and maintained contact through email and telephone correspondence • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • CAPL has considered feedback provided by NAC during consultation, including information on NAC's functions, interests and activities within the EMBA and all claims raised have been addressed • On April 27th 2023, CAPL emailed NAC with a summary of the outcomes of consultation undertaken to date. • NAC has not raised any further objections or claims relating to the activity scope as CAPL has provided a reasonable period and sufficient information to NAC 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 11A. CAPL will continue to engage NAC as part of its ongoing consultation as outlined in Section 8.3.4.1			
Ngarluma Yindjibarndi Foundation Ltd	12/12/2022	OC-000651	Phone	CAPL contacted Ngarluma Yindjibarndi Foundation Ltd (NYFL) to discuss upcoming Environment Plans that would require consultation. CAPL requested opportunity to meet with NYFL to co-design how it consults with NFYL and can start to form a relationship. NYFL requested that CAPL provide further details via email.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	12/12/2022	OC-000331	Email	CAPL advised that the NYFL 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 activities and NYFL was interested in connecting with CAPL and setting up a meeting.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	11/01/2023	OC-000333	Email	CAPL engaged with NYFL to organise a meeting with the board to discuss CAPL's activities and answer any questions NYFL may have.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	25/01/2023	OC-000335	Phone	NYFL advised CAPL that they were interested in CAPL spending time in the region and experience what industry contributions and funding can achieve. NYFL requested or more basic information sheet outlining CAPLs activities for their board meeting.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	25/01/2023	OC-000422	Phone	CAPL attempted to call NYFL but received an automated message that the office is unattended.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	03/02/2023	CN-000332	Email	CAPL provided an overview of the activity and provided a link to their website for further information regarding the activity. CAPL notified NYFL that they welcome meaningful feedback.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	15/02/2023	OC-000334	Email	CAPL communicated their planned agenda for the meeting. NYFL responded with additional requests to be added to the agenda which were included.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	08/03/2023	OC-000535	Face-to-face	NYFL is pleased to hear CAPL's appetite to strengthen the relationship and likewise NYFL sees the relationship with CAPL as an opportunity to set a new standard for consultation and stakeholder engagement, and in turn, create a more meaningful relationship between CAPL and the NYFL membership, and Ieramugadu community. – NYFL Directors noted that "People from the land speak for and care about the marine animals", even if they are far out to sea – Discussed the nature of many traditional narratives have origins and connection to the seascape, and that impacts to the seascape can have cultural repercussions. – Discussed that TO communities are rarely able to verify proponent management approaches to the seascape environment, including marine fauna, given it's not an observable environment – Discussed the interconnectedness of the cultural landscape, whereby TOs from the western Pilbara are held to account by other Nyambali (Cultural bosses) when proponents impact land and sea. The cultural responsibilities transcend Native Title and other boundaries. – Query about how Chevron is looking to understand the intangible values offshore – Concern raised about the cumulative environmental impacts (emissions etc.) – Query about when these EP activities will start and how Chevron will engage in future – Note that Chevron are interested in contributing to Law and Cultural solutions that may mitigate the impacts of proponent activity – Discussed the opportunity for Chevron to advocate for NYFL on social and economic issues	1. Directors noted concerns around marine fauna, specifically whales, dugongs and turtles as species of importance. Concerns about whether activities may have immediate and cascading impact on ecosystems 2. Directors noted that "People from the land speak for and care about the marine animals", even if they are far out to sea 3. Discussed the nature of many traditional narratives have origins and connection to the seascape, and that impacts to the seascape can have cultural repercussions 4. Discussed that TO communities are rarely able to verify proponent management approaches to the seascape environment, including marine fauna, given it's not an observable environment (as would be the case on a terrestrial landscape) 5. Discussed the interconnectedness of the cultural landscape, whereby TOs from the western Pilbara are held to account by other Nyambali (Cultural bosses) when proponents impact land and sea. The cultural responsibilities transcend Native Title and other boundaries. Lorice Douglas gave the example of her father, Tim Douglas, being held to account at Law Time by Desert mob, when proponents impact the land a seascape in Ngarluma Country 6. Query about how Chevron is looking to	**Claims have merit:** NYFL is a Traditional Owner representative organisation, who on their website identify as a 'relevant person' for oil and gas projects in areas that relate to Traditional Owner values in the North West of Australia. As the activity occurs in the North West of Australia, and has the potential to impact TO values that were identified during consultation, NYFL are considered relevant. Although specific claim or objections were not raised, values and concerns were discussed this must be acknowledged and considered in the EP: 1. CAPL acknowledge that marine fauna and ecosystems are of concern, and must be considered in the EP 2. CAPL acknowledge that NYFL speak for and care for marine animals, and this cultural	Ongoing engagement with NYFL is taking place. A formal Engagement Plan is also being co-designed by CAPL and NYFL, and once finalised will be implemented. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement. Table 4-15 was added to the EP, which includes specific responses from First Nations consultation in regards to cultural values or features.

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				CAPL requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. NYFL did not identify any additional relevant persons to consult. CAPL provided a summary of issues from the meeting. CAPL asked NYFL whether they had any additional comments, and expressed interest in further face to face engagement. NYFL acknowledged the summary and provided comment. CAPL expressed intention of further engagement.	understand the intangible values offshore 7. Concern raised about the cumulative environmental impacts (emissions etc.) by proponent activity. Ricky Smith noted that environmental impacts are observed on the terrestrial landscape “You can see the impact out on the Burrup. Used to be kangaroos everywhere, now there's nothing” 8. Query about when these EP activities will start and how Chevron will engage in future 9. Note that Chevron are interested in contributing to Law and Cultural solutions that may mitigate the impacts of proponent activity 10. Discussed the opportunity for Chevron to advocate for NYFL on social and economic issues	significance should be captured in the EP 3. CAPL acknowledge the cultural significance communicated regarding the seascape, and that this cultural significance should be captured in the EP 4. CAPL acknowledge that TO communities communicated that they are rarely able to verify proponent management approaches to the seascape environment. This indicates a need for CAPL to consider how to managed/enable ongoing engagement, and ensure it is captured in EP. 5.CAPL acknowledge the interconnectedness of the cultural landscape communicated by TO, that should be considered in the EP. 6. CAPL note that NYFL queried how CAPL is looking to understand the intangible values offshore (such as the presence and importance off shore). This question raises a value of the NYFL, and should be captured in the EP and considered in ongoing engagement. 7. CAPL acknowledge that NYFL raised the issue of cumulative impacts. As the activity is one of many oil and gas operations, this is a valid concern, and the impacts considered in the EP. 8. NYFL raised a query regarding when activities will start and ongoing engagement. As a relevant stakeholder, CAPL has a responsibility to engage with relevant persons in a manner that allows meaningful two way communication. 9. and 10. As a relevant stakeholder, CAPL has a responsibility to engage with relevant persons in a manner that allows meaningful two way communication, and provide the opportunity for advocacy and support.	
Ngarluma Yindjibarndi Foundation Ltd	06/04/2023	OC-000252	Email	CAPL met with NYFL to discuss the upcoming activities and to further understand areas of significance and cultural values including sea country and underwater cultural heritage. CAPL provided a summary of issues from the meeting. CAPL asked NYFL whether they had any additional comments, and expressed interest in further face to face engagement. NYFL acknowledged the summary and provided comment.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	09/05/2023	OC-000420	Phone	CAPL left as message for NYFL to call back in regard to CAPL’s Environment Plans.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	12/05/2023	OC-000429	Phone	NYFL confirmed that there were no further comments to add to their response to CAPL’s submission.	No objection or claim raised.		

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Ngarluma Yindjibarndi Foundation Ltd	15/05/2023	OC-000524	Email	CAPL thanked NYFL for their time and consultation. CAPL summarized NYFL's feedback that they have shared the last few months for NYFL's information: - Traditional Owner organisations were being inundated with proponents and that many Traditional Owners and TO organisations are experiencing consultation fatigue. NYFL noted that resourcing is required to support consultation. NYFL's position is that it is required to be consulted on EP matters that relate to the relevant environment. NYFL, like other TO organisations, need to be resourced appropriately - Noted that "People from the land speak for and care about the marine animals", even if they are far out to sea - Confirmed the nature of many traditional narratives have origins and connection to the seascape, and that impacts to the seascape can have cultural repercussions. - TO communities are rarely able to verify proponent management approaches to the seascape environment, including marine fauna, given it's not an observable environment. As such, there is still a significant lack of understanding about the industry. - There is an interconnectedness of the cultural landscape, whereby Tos from the western Pilbara are held to account by other Nyambali (Cultural bosses) when proponents impact land and sea. The cultural responsibilities transcend Native Title and other boundaries. - Were concerned about emissions NYFL thanked CAPL for their time and advised CAPL of their initiative on social impact capabilities.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	30/06/2023-30/06/2023	OC-000573	Face-to-face	CAPL met with NYFL in Roebourne to discuss development of ongoing engagement and relationship. NYFL confirmed that Yindjibarndi Ngurra Aboriginal Corporation consented to direct engagement with CAPL and that this could be the case for Ngarluma Aboriginal Corporation, however this was to be confirmed. NYFL made request that CAPL support NYFL with funding to employ a person to support with ongoing consultation as resourcing is their biggest challenge.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	30/06/2023	OC-000802	Email	CAPL thanked NYFL for their time and informed NYFL of their schedule and plans for upcoming consultation and on country engagement not consulting.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	05/07/2023-05/07/2023	OC-000592	Email	CAPL spent time with NYFL social impact team providing ongoing mentoring and support.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	12/07/2023-26/07/2023	OC-000804	Email	Further discussions between NYFL and CAPL around formalizing an engagement plan.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	07/08/2023-07/08/2023	OC-000593	Email	CAPL extended solicitation of EOI for NYFL to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with NYFL further.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	07/08/2023-07/08/2023	OC-000605	Face-to-face	CAPL met with NYFL to discuss consultation planning and development of Engagement Plans. NYFL advised that currently they do not have the capacity to digest consultation information so the onus is on operators to find a way to consult and engage meaningfully. Reiterated that Yindjibarndi Ngurra Aboriginal Corporation had delegated authority for consultation to NYFL for NOPSEMA consultations.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	12/09/2023-12/09/2023	OC-000645	Email	CAPL contacted NYFL to provide updated draft engagement plan for discussion with CEO and Directors.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	27/09/2023	OC-000805	Email	CAPL sent through a draft of the engagement plan to NYFL and expressed their understanding of the challenges facing NYFL and its board. CAPL offered to catch up over the phone. NYFL advised that the engagement plan looks like a great starting point and advised they would be in Perth in the coming weeks and would let CAPL know if they have time to catch up. CAPL advised they would be happy to host NYFL and would also welcome the chance to inform NYFL of an EP submission. CAPL advised they were planning to be back up north the following weeks.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	27/09/2023-27/09/2023	OC-000733	Email	NYFL wrote to CAPL thanking them for work on developing engagement plan and proposed an opportunity to discuss further in person, in Perth, in the coming weeks	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	27/10/2023	OC-000889	Email	CAPL continued engagement with NYFL and thanked them for the Monday Catch up. CAPL listed actions from their discussion: - NYFL to confirm a meeting with proponent working group around designing how we consult going forward. Ideally mid-late November - NYFL to confirm meeting with proponent working group for late February/Early March 2024. We will be in a position then to discuss 2 new EP's	No objection or claim raised.		

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				- NYFL and CAPL to discuss consultation agreement and rates - CAPL to keep conversation going around governance - CAPL partnership opportunities			
Ningaloo Blue Dive	20/02/2023	CN-000205	Email	CAPL advised that Ningaloo Blue Dive 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 Ningaloo Blue Dive that they welcome meaningful feedback.	No objection or claim raised.		
Ngarluma Yindjibarndi Foundation Ltd	27/10/2023-01/11/2023	OC-000890	Email	NYFL thanked CAPL for the follow up and advised they would be keen to chat further. NYFL also identified that PBCs have a lot going on at present so will engage at a better time. To summarise consultation with NYFL to date: • CAPL commenced consultation with NYFL on 12th December 2022 with an introductory email and link to the Consultation Hub on CAPL's website • CAPL has met with NYFL representatives in 3 face-to-face meetings and maintained contact through email and telephone correspondence • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • CAPL has considered feedback provided by NYFL during consultation, including information on NYFL's functions, interests and activities within the EMBA and all claims raised have been addressed • On 15th May 2023, CAPL emailed NYFL with a summary of the outcomes of consultation undertaken to date • NYFL has not raised any further objections or claims relating to the activity scope as CAPL has provided a reasonable period and sufficient information to NYFL 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 11A. CAPL will continue to engage NYFL as part of its ongoing consultation as outlined in Section 8.3.4.1.	No objection or claim raised.		
Ningaloo Blue Dive	11/05/2023	OC-000446	Email	CAPL reached out and followed up Ningaloo Blue Dive to provide any feedback they may have on the activity. CAPL confirmed that Ningaloo Blue Dive has not expressed specific concerns or objections to the planned activity.	No objection or claim raised.		
Ningaloo Blue Dive	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Ningaloo Coast World Heritage Advisory Committee (NCWHAC)	16/02/2023	CN-000489	Email	CAPL advised the Ningaloo Coast World Heritage Advisory Committee 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 in a factsheet. CAPL notified the Ningaloo Coast World Heritage Advisory Committee that they welcome meaningful feedback. Ningaloo Coast World Heritage Advisory Committee advised that the information would be shared with the Committee at a meeting in May 2023 and would revert back to CAPL with any feedback. CAPL contacted The Committee to see whether there was any feedback from the Committee meeting. No response was received.	No objection or claim raised.		
Ningaloo Coast World Heritage Advisory Committee (NCWHAC)	08/05/2023-08/05/2023	OC-000638	Email	CAPL contacted NCWHAC following up on previous meeting and email correspondence.	No objection or claim raised.		
Ningaloo Glass Bottom Boat	20/02/2023	CN-000414	Email	CAPL provided an overview of the activity and provided a link to their website for further information regarding the activity. CAPL notified Ningaloo Glass Bottom Boats that they welcome meaningful feedback.	No objection or claim raised.		
Ningaloo Glass Bottom Boat	11/05/2023	OC-000445	Email	CAPL followed up with Ningaloo Glass Bottom Boats to provide any feedback they may have on the activity. CAPL confirmed that Ningaloo Glass Bottom Boats has not expressed specific concerns or objections to the planned activity.	No objection or claim raised.		
Ningaloo Glass Bottom Boat	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email.	No objection or claim raised.		

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				CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.			
Ningaloo Visitor Centre	09/01/2023	OC-000176	Email	CAPL advised that the Ningaloo Visitors Centre had been identified as a relevant person with functions, interests or activities that may be affected by the activity and ensure CAPL have the correct contact.	No objection or claim raised.		
Ningaloo Visitor Centre	20/02/2023	CN-000179	Email	CAPL advised that the Ningaloo Visitors Centre 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 the Ningaloo Visitors Centre that they welcome meaningful feedback.	No objection or claim raised.		
Ningaloo Visitor Centre	11/05/2023	OC-000447	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Ningaloo Whaleshark n Dive	20/02/2023	CN-000203	Email	CAPL advised that Ningaloo Whale Shark n Dive 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 Ningaloo Whale shark n Dive that they welcome meaningful feedback.	No objection or claim raised.		
Ningaloo Whaleshark n Dive	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Ningaloo Whaleshark n Dive	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Ningaloo Whaleshark Swim	20/02/2023	CN-000202	Email	CAPL advised that Ningaloo Whaleshark Swim 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 Ningaloo Whaleshark Swim that they welcome meaningful feedback.	No objection or claim raised.		
Ningaloo Whaleshark Swim	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Ningaloo Whaleshark Swim	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Northern Prawn Fishery (NPF)	14/03/2023	CN-000193	Email	CAPL advised that the NPF 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 the NPF that they welcome meaningful feedback.	No objection or claim raised.		
Northern Prawn Fishery (NPF)	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Northern Prawn Fishery (NPF)	08/11/2023	OC-000920	Phone	CAPL called stakeholders to confirm close out of consultation regarding Environment Plans for current CAPL activities. There was no answer.	No objection or claim raised.		

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Oil Spill Response Limited (OSRL)	05/10/2022	CN-000536	Email	CAPL advised OSRL 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Oil Spill Response Limited (OSRL)	15/02/2023	CN-000211	Email	CAPL advised that the OSRL 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 the OSRL that they welcome meaningful feedback.	No objection or claim raised.		
Onslow Chamber of Commerce and Industry – CCI	05/10/2022	CN-000470	Email	CAPL advised Onslow Chamber of Commerce and Industry (OCCI) 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Onslow Chamber of Commerce and Industry – CCI	17/01/2023	OC-000092	Email	CAPL advised the OCCI had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans.	No objection or claim raised.		
Onslow Chamber of Commerce and Industry – CCI	23/01/2023	OC-000286	Virtual Meeting	CAPL met with the OCCI to provide an overview of their new approach to consultation along with an update on their Environment Plans.	No objection or claim raised.		
Onslow Chamber of Commerce and Industry – CCI	07/02/2023	OC-000295	Virtual Meeting	CAPL spoke with a representative from OCCI to provide an overview of their new approach to consultation along with an update on their Environment Plans. CAPL provided guidance on how to find information regarding risks associated with the activities in CAPL's online consultation hub for upcoming activities.	No objection or claim raised.		
Onslow Chamber of Commerce and Industry – CCI	08/02/2023	CN-000093	Email	CAPL notified the OCCI that the Environment Plans site on CAPL's website was live and CAPL had published in local, state and national newspaper to help identify additional relevant persons. CAPL also requested that the Onslow Chamber of Commerce and Industry share the advert internally via their EDM to their members.	No objection or claim raised.		
Onslow Chamber of Commerce and Industry – CCI	16/02/2023	OC-000094	Email	CAPL reached out to the OCCI to see if there were any questions that came through after the presentation and requested that if there were any questions, CAPL would be happy to have a chat. OCCI stated that at this point in time, no questions had been raised.	No objection or claim raised.		
Onslow Chamber of Commerce and Industry – CCI	02/03/2023	OC-000147	Email	OCCI advised their community of CAPL's information briefing on their proposed offshore activities.	No objection or claim raised.		
Onslow Chamber of Commerce and Industry – CCI	18/03/2023	OC-000095	Email	OCCI sent through their newsletter that had an advert from CAPL seeking relevant persons engagement.	No objection or claim raised.		
Paspaley Pearls	10/05/2023	CN-000442	Email	CAPL advised that Paspaley Pearls 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 Paspaley Pearls that they welcome meaningful feedback.	No objecttion or claim raised.		
Paspaley Pearls	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Paspaley Pearls	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Pearl Producers Association (PPA)	08/02/2023	CN-000234	Email	CAPL advised that the PPA 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 the PPA that they welcome meaningful feedback.	No objecttion or claim raised.		
Pearl Producers Association (PPA)	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		

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Pearl Producers Association (PPA)	08/11/2023	OC-000924	Phone	CAPL called to close out consultation with Stakeholder. Phone mailbox was full, CAPL were unable to leave message.	No objection or claim raised.		
Pearl Producers Association (PPA)	29/11/2023	OC-000961	Email	CAPL sent a final close out email stating they have made several attempts to make contact via email / telephone regarding the opportunity to consult on our proposed activities. To date CAPL have not received a reply from the organisation. CAPL would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
PGS Australia Pty Ltd	15/02/2023	CN-000213	Email	CAPL advised that PGS 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 PGS that they welcome meaningful feedback.	No objection or claim raised.		
PGS Australia Pty Ltd	10/05/2023	OC-000436	Email	CAPL reached out to PGS to provide any feedback they may have on the activity. CAPL confirmed that PGS has not expressed specific concerns or objections to the planned activity	No objection or claim raised.		
PGS Australia Pty Ltd	23/11/2023	OC-000961	Email	CAPL sent a final close out email stating they have made several attempts to make contact via email / telephone regarding the opportunity to consult on our proposed activities. To date CAPL have not received a reply from the organisation. CAPL would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Pilbara Development Commission	19/12/2022	OC-000101	Email	CAPL advised the Pilbara Development Commission had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. Pilbara Development Commission responded they would be pleased to meet with CAPL. A meeting was organised.	No objection or claim raised.		
Pilbara Development Commission	01/02/2023	OC-000289	Face-to-face	CAPL met with the Pilbara Development Commission to provide an overview of their new approach to consultation along with an update on CAPL's Environment Plans.	No objection or claim raised.		
Pilbara Development Commission	08/02/2023	CN-000102	Email	CAPL advised the Pilbara Development Commission 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 Pilbara Development Commission that they welcome meaningful feedback.	No objection or claim raised.		
Pilbara Development Commission	17/02/2023	OC-000103	Email	Chevron Australia shared the contact details with the Pilbara Development Commission to discuss the new Hostel in Newman for Martu kids that are travelling down for School.	No objection or claim raised.		
Pilbara Ports Authority	05/10/2022	CN-000155	Email	CAPL advised Pilbara Ports Authority 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 notified PPA that they welcome meaningful feedback. PPA notified CAPL with an update in contact details. CAPL sent the information sheet to the updated contact email address.	No objection or claim raised.		
Pilbara Ports Authority	08/02/2023	CN-000236	Email	CAPL advised that Pilbara Ports Authority 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 the PPA that they welcome meaningful feedback.	No objecttion or claim raised.		
Protect Ningaloo	10/02/2023	CN-000223	Email	CAPL advised that Protect Ningaloo 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 Protect Ningaloo that they welcome meaningful feedback. CAPL sent a follow up to confirm the email was received.	No objection or claim raised.		
Protect Ningaloo	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Recfishwest (WA)	05/10/2022	CN-000470	Email	CAPL advised 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Recfishwest (WA)	03/11/2022	OC-000473	Email	Recfishwest advised CAPL of the importance of the ecosystems surrounding the proposed activities and that recreational fishing occurs in the area. They requested to be kept engaged with future updates regarding the activities, and suggested engagement with charter operators in the region. CAPL acknowledged receipt of email and advised Recfishwest of their intent to liaise accordingly.	Recreational fishing is an integral part of the Pilbara lifestyle, and the array of offshore islands, coral reefs and habitats include some of Australia's prime fishing locations and opportunities. The region holds highly valued	**Claims have merit:** This organisation is the peak body representing the State-managed recreational fisheries. Recreational fishing has been	No changes made to the EP. The Description of the Environment identified Recreational fisheries (Section 4.4.2) and Tourism and

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					species, including many species of emperor, tropical snapper, mackerel, billfish, Given that some of the proposed operations will occur in close proximity to Barrow Island, recreational fishing, including charter fishing, may be affected by the proposed activities as many of the experiences and species mentioned above can be encountered in the proposed operational area. In review of the works planned in the fact sheets, Recfishwest notes that there will be 500 m exclusion zones placed around vessels associated with the proposed activities. As the activities will be completed over a few years (from mid-2023 to mid-2026), it will be important for us to be kept informed on the progress of the proposal so that we are able to communicate the expected commencement and details of activities with the recreational fishing community. Furthermore, it is recommended that Chevron makes contact with charter operators in the region to ensure that they are aware of the proposal.	identified within coastal and nearshore areas of the EMBA. Although specific claim or objections were not raised, values and concerns were discussed this must be acknowledged and considered in the EP: 1. CAPL acknowledges the importance of recreational fishing, and that it may occur within the EMBA. As such, this must be addressed within the EP. 2. CAPL acknowledges that valued fish species occur within the region and must be addressed within the EP. 3. CAPL note the close proximity of the Operational Area to Barrow Island, and that recreational fishing, including charter fishing, may be affected by the proposed activities, and this must be considered in the EP. 4. CAPL acknowledges Recfishwest (WA) request ongoing consultation and notification of commencement. As they are a relevant person, this is reasonable. 5. CAPL acknowledge that charter operators within the region have the potential to be relevant persons, and should be engaged with.	recreation (Section 4.4.5) have described the receptors within the operational area and the EMBA, including charter fishers. Notifications of commencement is included in Table 8-5; ongoing consultation considered covered by requirements already in Table 8-5 for potentially affected relevant persons.
Recfishwest (WA)	24/02/2023	OC-000125	Email	CAPL advised that Recfishwest 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 Recfishwest that they welcome meaningful feedback. Recfishwest acknowledged receipt of email and requested to be included in consultations and advised the appropriate contact for all correspondence in the future. A meeting was arranged.	No objection or claim raised.		
Recfishwest (WA)	28/02/2023	OC-000264	Virtual Meeting	CAPL spoke with representatives from Recfishwest. CAPL provided an overview of their new online interaction hub and update on their Environment Plans. Recfishwest advised that continued consultation is encouraged. CAPL offered to present current activities to the board and provide an EDM for Recfishwest.	No objection or claim raised.		
Recfishwest (WA)	10/03/2023	OC-000185	Email	CAPL provided details of the activity and discussed the best method to circulate information about activities with Recfishwest and their members. Recfishwest enquired into CAPL's consultation process, to which CAPL responded.	No objection or claim raised.		
Recfishwest (WA)	23/03/2023	OC-000165	Phone	CAPL contacted Recfishwest to request that CAPL's EP identification information be published in the Recfishwest EDM. Recfishwest advised that the content is inappropriate for the newsletter.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	05/10/2022	CN-000536	Email	CAPL advised RRKAC 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 advised that they welcome meaningful feedback.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	19/01/2023	OC-000737	Email	CAPL 55rganized to meet with RRKAC and discuss upcoming Environment Plans.	No objection or claim raised.		

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Robe River Kuruma Aboriginal Corporation (RRKAC)	31/01/2023	OC-000543	Face-to-face	CAPL met with representatives from RRKAC to discuss CAPL's upcoming Environment Plan activities. CAPL sought feedback on areas of significance and cultural values including sea country and underwater cultural heritage. CAPL requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. RRKAC did not identify any additional relevant persons to consult. RRKAC advised the information will be presented to their heritage advisory committee and will revert back to CAPL with any comments, questions, queries they may have. RRKAC confirmed they had no further comments upon presenting to the heritage advisory committee.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	03/02/2023	CN-000378	Email	CAPL sent a formal written notice via email to RRKAC as an identified 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 RRKAC that they welcome meaningful feedback. RRKAC thanked CAPL and informed them that they had downloaded the maps provided and would let CAPL know right away if there were any issues arising. CAPL thanked RRKAC.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	04/05/2023	OC-000725	Email	CAPL sent a follow up email asking RRKAC if they had any feedback about the Environment plans from HAC or from the community. CAPL informed RRKAC that should they have any questions on the proposed activities, CAPL would appreciate if they could be provided before the 12th of May to be considered in the development of the Environment Plans.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	06/05/2023-08/05/2023	OB-000726	Email	Following the written notification. RRKAC requested that CAPL inform them of activities that were a perceived possible impact to their native claim area that could directly impact the environmental integrity of Jahjiwurra (Robe River). RRKAC have requested that they would appreciate future notification of activities. CAPL responded to RRKAC and thanked them for the feedback and acknowledged their time. CAPL informed RRKAC that they would continue engagement with them regarding activities as requested.	1. Ask to be consulted only when activities were within the Kuruma Marthudunera native title claim area (including the Unresolved Area – between Northwest Coastal Highway and waters to 2 km offshore of the mouth of Jajiwurra (Robe River), and if a possible environmental incident could directly impact their claim area – that is oil spills, dust/gas emissions, etc. that might affect the environmental integrity of Jajiwurra – e.g. bird/fish populations, flora health, riparian vegetation. 2. RRKAC request notification (including maps) on commencement (only if within area of significance identified) 3. Raised the Kuruma Marthudunera native title claim area and the Robe River mouth (including flora, fauna and riparian vegetation) as an important value/sensitivity.	**Claim has merit:** As a relevant person, the request for ongoing engagement is considered fair and reasonable. However, as the EMBA is outside the area of concern, therefore further engagement on interaction with the sensitivities raised is not expected.	No change made to the EP. The EMBA is outside of the area of concern.
Robe River Kuruma Aboriginal Corporation (RRKAC)	13/07/2023	OC-000738	Email	RRKAC and CAPL organised to meet in Karratha to discuss CAPL Environment Plans and OPP.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	13/07/2023-13/07/2023	OC-000723	Email	CAPL advised RRKAC that they would be in Karratha in a few weeks' time and would like to organise a meeting to provide an update on CAPL's Environment Plans and OPP.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	07/08/2023-07/08/2023	OC-000599	Email	CAPL extended solicitation of EOI for RRKAC to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with RRKAC further.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	07/08/2023-07/08/2023	OC-000604	Email	RRKAC confirmed receipt of invitation for oil spill training and that they had submitted an application for the Chevron Community Spirit Grant.	No objection or claim raised.		
Robe River Kuruma Aboriginal Corporation (RRKAC)	30/08/2023-12/09/2023	OC-000724	Email	RRKAC introduced CAPL to their newly appointed Senior Heritage Officer who will be working on Country and Culture for RRKAC regarding mining and exploration matters. RRKAC requested they be included in future correspondence. CAPL thanked RRKAC for the email.	RRKAC requested they be included in future correspondence.	**Claim has merit:** As a relevant person, the request for ongoing engagement is considered fair and reasonable.	Ongoing engagement with RRKAC is taking place. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing

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							engagement with First Nations representative bodies) which further describes ongoing engagement.
Robe River Kuruma Aboriginal Corporation (RRKAC)				To summarise consultation with RRKAC to date: • CAPL commenced consultation with RRKAC on 23rd September 2022 with an introductory email and link to the Consultation Hub on CAPL's website • CAPL has met with RRKAC representatives in 2 face-to-face meetings and maintained contact through email and telephone correspondence • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • RRKAC were given 12 weeks to consider the information provided • CAPL has considered feedback provided by RRKAC during consultation, including information on RRKAC's functions, interests and activities within the EMBA and all claims raised have been addressed • RRKAC has not raised any further objections or claims relating to the activity scope as CAPL has provided a reasonable period and sufficient information to RRKAC 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 11A. CAPL will continue to engage RRKAC as part of its ongoing consultation as outlined in Section 8.3.4.1			
Sail Ningaloo	20/02/2023	CN-000199	Email	CAPL advised that Sail Ningaloo 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 Sail Ningaloo that they welcome meaningful feedback.	No objection or claim raised.		
Sail Ningaloo	10/05/2023	OC-000434	Email	Chevron Australia reached out to Sail Ningaloo to provide any feedback they may have on the activity. Chevron Australia confirmed that Sail Ningaloo has not expressed specific concerns or objections to the planned activity.	No objection or claim raised.		
Sail Ningaloo	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Santos	05/10/2022	CN-000536	Email	CAPL advised Santos 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Santos	20/03/2023	CN-000186	Email	CAPL advised that Santos 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 Santos that they welcome meaningful feedback. Santos confirmed the receipt of this email, and requested to be included in consultation.	No objection or claim raised.		
Santos	10/05/2023	OC-000432	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email.	No objection or claim raised.		
SapuraOMVUpstream	14/02/2023	CN-000218	Email	CAPL advised that Sapura OMV 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 Sapura OMV that they welcome meaningful feedback.	No objection or claim raised.		
SapuraOMVUpstream	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		

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Shire of Ashburton (Pilbara)	05/10/2022	CN-000470	Email	CAPL advised 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Shire of Ashburton (Pilbara)	17/01/2023	OC-000096	Email	CAPL advised that the Shire of Ashburton had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL requested that at the next meeting to provide an overview of the activity. Shire of Ashburton advised that previously CAPL has firstly presented to council their activity and then to the community. A meeting was arranged.	No objection or claim raised.		
Shire of Ashburton (Pilbara)	25/01/2023	OC-000285	Phone	CAPL provided a follow up phone call regarding an email CAPL sent on the Environment Plan consultation process. CAPL provided an overview of their new approach to consultation along with an update on their Environment Plans.	No objection or claim raised.		
Shire of Ashburton (Pilbara)	07/02/2023	CN-000097	Email	CAPL advised that the Shire of Ashburton 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 the Shire of Ashburton that they welcome meaningful feedback. The Shire of Ashburton stated that they would circulate with relevant parties internally.	No objection or claim raised.		
Shire of Ashburton (Pilbara)	07/02/2023	OC-000293	Virtual Meeting	The Shire of Ashburton shared their concerns regarding impacts on recreation and fishing and suggested CAPL present at an information session in Onslow.	The Shire of Ashburton shared their concerns regarding impacts on recreation and fishing and suggested CAPL present at an information session in Onslow.	**Claim has merit:** CAPL acknowledge that although limited, recreational fishing activities have the potential to occur within the Operational area. As such the request to present on these impacts in Onslow has merit.	No change made to the EP. e Description of the Environment identified Recreational fisheries (Section 4.4.2) and Tourism and recreation (Section 4.4.5) have described the receptors within the operational area and the EMBA. The impacts and risks to recreation and fishing has been assessed throughout the risk assessment (Section 7)
Shire of Ashburton (Pilbara)	14/02/2023	OC-000098	Email	Shire of Ashburton thanked CAPL for presenting on their upcoming activities. The Shire of Ashburton noted that other titleholders have spoken to them about risk protocols in Commonwealth and State waters and possible contingencies in place for accidents in relation to a hydrocarbon incident. The Shire of Ashburton provided contact names and details for people within the Shire of Ashburton that assist in emergency management.	No objection or claim raised.		
Shire of Ashburton (Pilbara)	01/03/2023	OC-000128	Email	Shire of Ashburton thanked CAPL for presenting on their upcoming activities and provided contact details. CAPL provided the Shire of Ashburton with an overview of their new online consultation Hub and activities. The Shire of Ashburton was informed that if they had any further queries to contact CAPL.	No objection or claim raised.		
Shire of Ashburton (Pilbara)	01/03/2023	OC-000269	Virtual Meeting	CAPL met with representatives from Shire of Ashburton. CAPL provided an overview of their new online interaction hub. CAPL answered and discussed relevant questions and queries from the Shire of Ashburton and defined contacts and procedures in the event an emergency occurs. CAPL invited the Shire of Ashburton to attend the next oil spill response exercise at Wheatstone and local Emergency Management Committee in Onslow.	No objection or claim raised.		
Shire of Ashburton (Pilbara)	10/05/2023	OC-000438	Email	CAPL reached out to the Shire of Ashburton to provide any additional feedback they may have on the activity. CAPL advised that consultation regarding the Environment plans was closing and that if any further feedback was received CAPL was happy to listen and discuss during ongoing engagement.	No objection or claim raised.		
Shire of Carnarvon (Gascoyne)	20/12/2022	OC-000178	Email	CAPL advised that the Shire of Carnarvon had been identified as a relevant person with functions, interests or activities that may be affected by the activity. Chevron confirmed contact details for future consultation.	No objection or claim raised.		
Shire of Carnarvon (Gascoyne)	03/01/2023	OC-000083	Email	CAPL engaged the Shire of Carnarvon to provide an overview of the activity and consultation. CAPL showed their gratitude in support from the Shire of Carnarvon to begin engagement with relevant persons in the Shire of Carnarvon. The Shire of Carnarvon identified additional Relevant Persons CAPL should have engagements with.	The Shire of Carnarvon identified additional Relevant Persons CAPL should consider engaging with.	**Claim has merit:** The Shire of Carnarvon identified additional Relevant Persons that CAPL should have engagements with being Coral Bay Progress Association and the Visitors Centre and Ningaloo Coast World Heritage Advisory Committee. On review all were	No change made to the EP. Additional engagement with stakeholders identified during consultation were engaged with.

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						considered relevant and as such the claim has merit.	
Shire of Carnarvon (Gascoyne)	03/01/2023	OC-000248	Phone	CAPL spoke to the Shire of Carnarvon and established initial contact and provided an update on the EP process. The Shire of Carnarvon agreed to discuss internally who the primary relevant persons are within the Shire that would be the central points of dissemination and provide these contacts back to CAPL.	No objection or claim raised.		
Shire of Carnarvon (Gascoyne)	27/01/2023	OC-000287	Phone	CAPL met with representatives from the Shire of Carnarvon in Exmouth. The Shire of Carnarvon provided direction on how to approach engagement with local traditional owners.	No objection or claim raised.		
Shire of Carnarvon (Gascoyne)	06/02/2023	CN-000177	Email	CAPL advised that the Shire of Carnarvon 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 the Shire of Carnarvon that they welcome meaningful feedback. The Shire acknowledges the email, and a meeting was arranged.	No objection or claim raised.		
Shire of Carnarvon (Gascoyne)	09/03/2023-09/03/2023	OC-000637	Face-to-face	CAPL met with Shire of Carnarvon representatives in Carnarvon to discuss Environment Plans. Shire of Carnarvon advised that there were no concerns or objections. CAPL and Shire of Carnarvon representatives discussed opportunities for future partnerships and collaboration including training for rangers.	No objection or claim raised.		
Shire of Carnarvon (Gascoyne)	10/03/2023	OC-000169	Email	CAPL provided a summary of consultation actions and expectations with continued engagement with the Shire of Carnarvon.	No objection or claim raised.		
Shire of Carnarvon (Gascoyne)	04/05/2023	OC-000398	Email	CAPL reached out to the Shire of Carnarvon to provide any feedback they may have on the activity. The Shire of Carnarvon confirmed that they have no concerns or objections to CAPL's Environment Plans	No objection or claim raised.		
Shire of Exmouth (Gascoyne)	17/01/2023	OC-000279	Phone	CAPL attempted to make first initial contact with the Shire of Exmouth.	No objection or claim raised.		
Shire of Exmouth (Gascoyne)	18/01/2023	OC-000107	Email	CAPL advised that the Shire of Exmouth had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. Shire of Exmouth would be pleased to meet with CAPL, and a meeting was organised.	No objection or claim raised.		
Shire of Exmouth (Gascoyne)	24/01/2023	OC-000284	Face-to-face	CAPL met with representatives from Shire of Exmouth in Exmouth. The Shire of Exmouth provided advice on local relevant persons that we should be engaging. CAPL provided an overview of their new approach to consultation along with an update on their Environment Plans. The Shire of Exmouth invited CAPL to present at the Council meeting.	No objection or claim raised.		
Shire of Exmouth (Gascoyne)	01/02/2023	OC-000170	Email	CAPL reached out to the Shire of Exmouth to understand who they should contact locally from an environment/conservation perspective. The Shire of Exmouth provided CAPL with relevant persons to contact who may be affected by their activities.	Shire of Exmouth identified Cape Conservation Group and Protect Ningaloo identified as potential relevant people.	**Claim has merit:** CAPL acknowledge that Cape Conservation Group and Protect Ningaloo do have the potential to be relevant persons, and should be engaged with.	No change made to the EP. Additional engagement with stakeholders identified during consultation were engaged with.
Shire of Exmouth (Gascoyne)	08/02/2023	CN-000540	Email	CAPL advised that the Shire of Exmouth 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 the Shire of Exmouth that they welcome meaningful feedback.	No objection or claim raised.		
Shire of Exmouth (Gascoyne)	24/02/2023	OC-000268	Virtual Meeting	CAPL met with representatives from the Shire of Exmouth. The Shire of Exmouth provided feedback from the Council and the current need for a waste management master plan due to high volumes of land fill or transport per week. CAPL provided possible alternatives and identified the Shire of Exmouth's main priorities.	The Shire of Exmouth provided feedback from the Council and the current need for a waste management master plan due to high volumes of land fill or transport per week.	**Claim does not have merit:** CAPL do not send waste to Exmouth and waste generated for the activity is not expected to be high volumes.	
Shire of Exmouth (Gascoyne)	01/03/2023	OC-000276	Phone	The Shire of Exmouth advised that it would be good for CAPL to become a member of the Chamber and get involved with the community reference groups that will be able to support CAPL's consultation process. The Shire of Exmouth spoke to various issues that they are currently dealing with.	No objection or claim raised.		
Shire of Exmouth (Gascoyne)	02/05/2023	OC-000356	Email	CAPL contacted Shire of Exmouth to confirm that there were no objections or further input required on our upcoming Offshore activities.	No objection or claim raised.		

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Terrafirma Offshore PTY LTD	09/01/2023	OC-000175	Email	CAPL advised that the Terrafirma Offshore had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL contacted Terrafirma to confirm contact details for future consultation.	No objection or claim raised.		
Terrafirma Offshore PTY LTD	01/05/2023	CN-000405	Email	CAPL advised Terrafirma Offshore 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 Terrafirma Offshore that they welcome meaningful feedback	No objection or claim raised.		
Terrafirma Offshore PTY LTD	15/05/2023	OC-000448	Email	CAPL reached out to Terrafirma Offshore to provide any feedback they may have on the activity. CAPL confirmed that Terrafirma Offshore has not expressed specific concerns or objections to the planned activity.	No objection or claim raised.		
TGS NOPEC Geophysical Company Pty Ltd	15/02/2023	CN-000212	Email	CAPL advised that TGS NOPEC 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 TGS NOPEC that they welcome meaningful feedback.	No objection or claim raised.		
TGS NOPEC Geophysical Company Pty Ltd	10/05/2023	OC-000437	Email	CAPL reached out to TGS NOPEC to provide any feedback they may have on the activity.	No objection or claim raised.		
Top Gun Charters	05/10/2022	CN-000536	Email	CAPL advised 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Top Gun Charters	04/05/2023	CN-000396	Email	CAPL advised that Top Gun Charters 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 Top Gun Charters that they welcome meaningful feedback.	No objection or claim raised.		
Tourism Western Australia	09/01/2023	OC-000230	Email	CAPL advised that Tourism WA had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL suggested they coordinate a phone call to discuss and agree on the communication protocols and to consult on the current Environment Plans. Tourism Western Australia would be pleased to meet with CAPL and a meeting was organised.	No objection or claim raised.		
Tourism Western Australia	27/02/2023	CN-000370	Email	CAPL advised that Tourism Western Australia 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 Tourism Western Australia that they welcome meaningful feedback. CAPL thanked Tourism Western Australia for their time.	No objection or claim raised.		
Tourism Western Australia	27/02/2023	OC-000266	Virtual Meeting	CAPL spoke with Tourism WA and suggested CAPL should speak with tourism operators and cruise ship operators. Tourism WA provided advice on potential investment opportunities with local tourism operators and showed interested in partnering with CAPL to develop tourism capacity.	Tourism WA identified potential relevant persons to engage with.	**Claim has merit:** CAPL activities have the potential to interact with tourism operators, therefore it is reasonable to consider the identified people as relevant persons.	No change made to the EP. Additional engagement took place.
Tourism Western Australia	27/09/2023	OC-000736	Email	Earlier in the year Tourism WA mentioned they would send a list of ship operators and possible relevant people for consultation to CAPL. CAPL reached out to Tourism WA to enquire about the list as they did not receive it. CAPL also confirmed they were consulting with AMSA so ships may not be necessary but that CAPL were happy to listen to Tourism WA advice.	No objection or claim raised.		
Tourism Western Australia	29/09/2023	OC-000800	Email	CAPL reached out to follow up on a list of cruise vessels TWA mentioned may be relevant to CAPL activities earlier in the year. TWA responded and suggested CAPL contact the Cruise Lines International Association.	Tourism WA suggested CAPL contact the Cruise Lines International Association.	**Claim has merit:** CAPL acknowledge that the identified stakeholder has the potential to be relevant persons, and should be engaged with.	No change made to the EP. Additional engagement took place.
Vermilion Oil & Gas	14/02/2023	CN-000187	Email	CAPL advised that Vermillion 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 Vermillion that they welcome meaningful feedback. CAPL sent a follow up to confirm whether Vermilion Oil & Gas received this email.	No objection or claim raised.		
Vermilion Oil & Gas	20/03/2023	CN-000187	Email	CAPL followed up with Vermilion to confirm email was received.	No objection or claim raised.		
Vermilion Oil & Gas	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under	No objection or claim raised.		

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				assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.			
View Ningaloo	20/02/2023	CN-000200	Email	CAPL advised that View Ningaloo 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 the View Ningaloo that they welcome meaningful feedback.	No objection or claim raised.		
View Ningaloo	11/05/2023	OC-000449	Email	CAPL reached out to View Ningaloo to provide any feedback they may have on the activity. CAPL confirmed that View Ningaloo has not expressed specific concerns or objections to the planned activity.	No objection or claim raised.		
Vocus Communications	05/10/2022	CN-000536	Email	CAPL advised 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 advised that that they welcome meaningful feedback.	No objection or claim raised.		
Vocus Communications	04/05/2023	CN-000397	Email	CAPL advised that Vocus Communications 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 Vocus Communications that they welcome meaningful feedback.	No objection or claim raised.		
WA Coastal and Marine Community Network	10/02/2023	CN-000222	Email	CAPL advised the WA Coastal and Marine Community Network 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 WA Coastal and Marine Community network that they welcome meaningful feedback. The WA Coastal and Marine Community Network confirmed they would like to be involved in engagement, and a meeting was organised.	No objection or claim raised.		
WA Coastal and Marine Community Network	21/03/2023	OC-000119	Virtual Meeting	CAPL provided WA Coastal and Marine Community Network information on upcoming activities via the Interaction Hub during a Teams meeting.	No objection or claim raised.		
WA Coastal and Marine Community Network	22/03/2023	OC-000120	Email	CAPL followed up with WA Coastal and Marine Community Network email after their Teams Meeting with links to CAPL's Interaction Hub.	No objection or claim raised.		
WA Marine Science Institute	01/03/2023	CN-000196	Email	CAPL advised that WA Marine Science Institute 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 WAMSI that they welcome meaningful feedback.	No objection or claim raised.		
WA Marine Science Institute	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	01/11/2022	OB-000545	Email	CAPL advised WAFIC had been identified as a relevant person with functions, interests or activities that may be affected by the activity. WAFIC responded with queries regarding how the materials will be soured and the quarantine requirements if it is coming from overseas. CAPL responded that the umbilicals and other subsea structures will be manufactured overseas and brought into Australia dry, so the equipment itself should not present a pathway for introduction of invasive marine pests (IMP). The focus for IMP risk management will be on biofouling and ballast water from vessels and this will be managed through CAPL's Quarantine Marine Vessels and compliance with the Biosecurity Act 2015. CAPL also have the Gorgon Terrestrial and Marine Quarantine Management System (QMS), which outlines measures to prevent introduction of both terrestrial non-indigenous species (INS) to Barrow Island and IMP to the surrounding waters. The QMS was due for revision in March this year and is currently being assessed by the State and Commonwealth Regulators, however changes were mostly administrative and the version currently on the CAPL's website is accurate for the most part. As the rock armour could potentially provide a pathway of exposure for the introduction of soil and NIS to Barrow Island, controls will be in place for the rock used within 500m of the coast and infrastructure contiguous with Barrow Island (termed the Barrow Island Marine Quarantine Controlled Access Zone) to ensure its clean and free from quarantine risk material.	WAFIC requested confirmation that materials used including umbilicals, pipeline and rock armour have been locally sourced to minimise biosecurity risks. If sourced from overseas or previous projects, must confirm equipment will be cleaned prior. WAFIC raised whether received directly from fishers regarding planned activities.	**Claims have merit:** 1. CAPL acknowledge that WAIFC raised Management of Biosecurity risk, and sought clarification on activities. Management of Biosecurity is required for this activity thus the claim has merit. 2. WAFIC also raised the requirement to engage with fishers - fishers have the potential to be impacted by the activity, therefore this claim has merit.	Section 7.8 has been revised to include the objections and claims raised by WAFIC. '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 7.8 has been updated with a summary of claim and response. No additional change made to the EP. The additional stakeholders identified during consultation were engaged with.
Western Australian Fishing Industry Council (WAFIC)	10/01/2023	OC-000085	Email	CAPL reached out to WAFIC and a meeting was organised to discuss and agree the communication protocols for consultation. A meeting was organised.	No objection or claim raised.		

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Western Australian Fishing Industry Council (WAFIC)	12/01/2023	OC-000278	Phone	CAPL established contact with WAFIC to organise a time to provide an overview of upcoming projects. WAFIC spoke to having concerns regarding seismic and decommissioning activities, and that they would be very eager to come together and work out the best model to communicate to fishers.	WAFIC expressed concerns regarding decommissioning and seismic activities.	**Claims have merit:** Decommissioning is within the scope of the activity, as such this claim is relevant and has merit. Seismic activities are not within scope, and is therefore not relevant for this activity.	The preliminary decommissioning strategy for the J-IC assets has been included within Section 3.6 of the EP.
Western Australian Fishing Industry Council (WAFIC)	03/02/2023	CN-000086	Email	CAPL thanked WAFIC for their time and providing further information for CAPL to understand more about their challenges as an industry and organisation. CAPL provided an overview of the activity and provided a link to their website for further information regarding the activity. CAPL notified WAFIC that they welcome meaningful feedback. CAPL noted down all of WAFICs challenges that they shared in respect to dealing with large volumes of proponent activity and the burdens that this places on them as an organisation. CAPL notified WAFIC that they will discuss some options internally with our leadership first and revert back. In the interim, if WAFIC have some ideas on how CAPL can engage directly with their industry CAPL requested WAFIC let us know.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	03/02/2023	OC-000087	Email	WAFIC thanked CAPL for meaningful discussions and provided a link to their consultation approach along with WAFIC included a post in their February newsletter advising their members of CAPL's new online interaction hub for feedback.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	10/02/2023	OC-000549	Email	Western Australian Fishing Industry Council provided a link to CAPL's consultation hub in their monthly newsletter for the activity that was sent out to WAFIC's email list including the below identified fishery groups within the Operational Area: - Mackerel Managed Fishery - Pilbara Crab Managed Fishery - Pilbara Line Fishery - Pilbara Trap Managed Fishery - Marine Aquarium Fish Managed Fishery - Specimen Shell Managed Fishery	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	28/02/2023	OC-000263	Virtual Meeting	CAPL spoke with representative from WAFIC. WAFIC responded with positive feedback on CAPL's consultation process and advised looking into the Bluefin Tuna spawning area.	WAFIC identified Bluefin Tuna spawning area as a potential receptor.	**Claims have merit:** The EMBA does intersect with the Bluefin Tuna spawning area.	The Bluefin Tuna spawning area is described in Section 4 , and is considered as a receptor in Section 7.
Western Australian Fishing Industry Council (WAFIC)	02/03/2023	OC-000291	Face-to-face	CAPL met with WAFIC at their office to provide an overview of their new approach to consultation along with an update on their Environment Plans. WAFIC provided an overview of their current concerns and there was discussions on how CAPL could support/assist with these concerns.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	01/05/2023	OC-000358	Email	CAPL contacted WAFIC to confirm that there were no concerns or objections to the planned activities discussed in the consultation process. CAPL acknowledged that they would like to develop a framework with WAFIC for ongoing consultation and engagement. CAPL confirmed they will advise of any material changes to the proposed activities and provide reasonable time for WAFIC to reassess potential impacts and risks on values and sensitivities. CAPL look forward to our ongoing consultations and continuing to explore new opportunities with WAFIC. WAFIC requested confirmation that feedback for specific activities were received by CAPL. CAPL provided a summary of feedback to date and sent to WAFIC for review. A meeting was organised.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	07/06/2023	OC-000570	Email	CAPL and WAFIC organised a time to catch up to discuss their ongoing relationship and CAPL engaged early to discuss future approvals. WAFIC provided their draft Consultation Guideline and welcomed any feedback from CAPL.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	07/06/2023-23/06/2023	OC-000793	Email	CAPL discussed setting up a meeting or the 19th of June to discuss engagement plan with WAFIC. After the meeting on the 19th, WAFIC sent through their draft engagement plan for CAPL to review. CAPL responded to WAFIC and advised they would get back to them ASAP.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	19/06/2023	OC-000560	Face-to-face	CAPL met with WAFIC representatives to discuss their continued relationship and the development of OPP and the opportunity for WAFIC's involvement in the process. WAFIC appreciated the opportunity provided by CAPL to be involved in the early stages of development of the OPP so that it can best represent the WA Fishing Industry. WAFIC advised that they are a significant and important stakeholder given the growing demands on the industry, particularly the increase in	No objection or claim raised.		

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				expanse of the offshore renewables sector. WAFIC also provided CAPL with a draft consultation framework.			
Western Australian Fishing Industry Council (WAFIC)	30/06/2023-06/07/2023	OC-000794	Email	Following the receipt of the WAFIC engagement plan, CAPL sent through a few suggestions to include. WAFIC appreciated the feedback and included the suggested changes. WAFIC advised that they would send the document through to CEO for approval before public release.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	09/08/2023-09/08/2023	OC-000613	Virtual Meeting	CAPL and WAFIC met to discuss ongoing partnership and support. WAFIC advised that they are still being inundated by proponents with information however most proponents are not prepared to pay for this consultation. CAPL reiterated its support for WAFIC to provide this important service. CAPL and WAFIC agreed to look at a partnership focused on helping WAFIC to advocate for members and coordinate research efforts.	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	15/08/2023	OC-000616	Email	CAPL wrote to WAFIC confirming details of discussion around CAPL support for WAFIC consultation framework, and intent to draft an agreement with WAFIC. CAPL confirmed interest in attending general meeting with Pilbara Line Fishers in September at the WAFIC office	No objection or claim raised.		
Western Australian Fishing Industry Council (WAFIC)	30/08/2023-08/09/2023	OC-000796	Email	WAFIC advised that CAPL were included in the annual management meeting for the Pilbara Line Trap, trawl fisheries. WAFIC advised that the Chair would like CAPL to attend lunch with the fishers and will give time after to talk about CAPL activities.	No objection or claim raised.		
Western Australian Museum	24/04/2023	CN-000382	Email	CAPL advised that the Western Australian Museum 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 the Western Australian Museum that they welcome meaningful feedback. The Western Australian Museum acknowledged the email, and indicated that they would reach out if a meeting was required.	No objection or claim raised.		
Western Gas	14/02/2023	CN-000219	Email	CAPL advised that Western Gas 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 Western Gas that they welcome meaningful feedback.	No objection or claim raised.		
Western Gas	04/09/2023-28/09/2023	OC-000633	Email	CAPL advised Stakeholders that had not responded to previous communications on whether they would like to be consulted in relation to the development of offshore Environment Plans. CAPL gave the option to receive further information or have a discussion with a Chevron Australia representative to respond directly to the email. CAPL advised that if the Stakeholder does not wish to receive emails from CAPL relating to Environments Plans in the future, please let CAPL know via return email.	No objection or claim raised.		
Western Gas	28/09/2023	OC-000787	Email	Western Gas advised they may be considered a relevant person and would like to participate in the consultation process.	No objection or claim raised.		
Western Gas	29/11/2023	OC-000962	Email	CAPL thanked Western Gas for their email and informed them that the Environment Plans were currently under assessment by NOPSEMA. CAPL advised they would still welcome consultation relating to the Environment plans in the future.	No objection or claim raised.		
Western Rock Lobster Council	19/01/2023	OC-000280	Phone	CAPL established contact with Western Rock Lobster Council to organise a time to provide an overview of upcoming projects. Western Rock Lobster Council confirmed their fishing areas and also shared their concerns about seismic impacts on lobsters. CAPL agreed to providing further information regarding the operational areas and providing the information sheet.	Western Rock Lobster Council confirmed their fishing areas and also shared their concerns about seismic impacts on lobsters.	**Claims does not have merit:** The EP is not a seismic EP thus the concern has no merit for this EP.	
Western Rock Lobster Council	08/02/2023	CN-000411	Email	CAPL thanked the Western Rock Lobster Council for their time on the phone, and provided a link to the 4D Seismic activity (outside the scope of this activity). CAPL advised that the Western Rock Lobster Council 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 the Western Rock Lobster Council that they welcome meaningful feedback.	No objection or claim raised.		
Whale and Dolphin Conservation Society	10/03/2023	CN-000221	Email	CAPL advised that Whale and Dolphin Conservation Society 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 Whale and Dolphin Conservation Society that they welcome meaningful feedback. CAPL sent a follow up to confirm whether they had received the email.	No objection or claim raised.		
Whale and Dolphin Conservation Society	27/03/2023	OC-000161	Phone	CAPL contacted Whale and Dolphin Conservation Society to confirm receipt of EP information using the number listed on their website however the number was not connected.	No objection or claim raised.		

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Wilderness Island	23/02/2023	CN-000198	Email	CAPL advised that Wilderness Island 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 Wilderness Island that they welcome meaningful feedback.	No objection or claim raised.		
Wilderness Island	11/05/2023	OC-000443	Email	CAPL followed up with Wilderness Island to provide any feedback they may have on the activity. CAPL confirmed that Wilderness Island has not expressed specific concerns or objections to the planned activity.	No objection or claim raised.		
Wilderness Society	10/02/2023	CN-000197	Email	CAPL advised that Wilderness Society 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 Wilderness Society that they welcome meaningful feedback. CAPL sent a follow up to confirm whether they had received the email.	No objection or claim raised.		
Wilderness Society	4/09/2023	OC-000715	Email	CAPL sent out an email identifying organisations that had previously not responded to any CAPL correspondence regarding Environment Plans or Offshore Project Proposals. CAPL informed that if a representative would like further information or a discussion with CAPL to respond to this email. CAPL advised that if they do not wish to correspond any further, CAPL would request they advise via return email.	No objection or claim raised.		
Wilderness Society	23/11/2023	OC-000960	Email	CAPL resent the written notice as requested following phone calls to the organisations. CAPL advised that the consultation period has closed, and CAPL environment plans are under assessment with the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). We would still welcome the opportunity to engage with you for upcoming activities and receive feedback for consideration in any future environmental plans.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	24/11/2022	OC-000371	Email	CAPL contacted the WAC to provide an overview of their current approach to consultation and Environment Plans for upcoming activities. A meeting was organised.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	30/11/2022	OC-000372	Virtual Meeting	CAPL advised WAC of the new NOPSEMA consultation requirements, CAPL's Environment Plans and what the best course of action is to consult with the WAC members and community. WAC suggested the best course of action was to focus on developing a communication plan between CAPL and WAC to commence rebuilding the relationship prior to discussions around CAPL's upcoming project activities (environmental plans). Both parties agreed to identify a suitable meeting date before the end of the year via email correspondence.	WAC suggested the best course of action was to focus on developing a communication plan between CAPL and WAC to commence rebuilding the relationship prior to discussions around CAPL's upcoming	**Claims have merit:** As a relevant person, CAPL has the responsibility to identify the correct engagement mechanism to ensure all appropriate information is disseminated in an appropriate fashion.	Ongoing engagement with WAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and WAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge sharing, and the type and frequency of interactions. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement.
Wirrawandi Aboriginal Corporation RNTBC (WAC)	06/12/2022	OC-000546	Email	CAPL engaged with WAC to confirm possible dates to meet the WAC board and Elders and develop a relationship. CAPL presented WAC with some questions regarding expectations to discuss when CAPL meet with the WAC board and Elders, including co-design, drafting up an agreement and the CAPL representation WAC would expect to see. WAC and CAPL organised to have an informal meeting prior to the Board meeting.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	22/12/2022	OC-000476	Face-to-face	A CAPL representative and the WAC General Manager met to discuss the draft agenda for the upcoming meeting between CAPL and the WAC Board and Elders, scheduled in January 2023.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	30/12/2022	OC-000374	Email	WAC attached information regarding the WAC Ranger Program and the request for Ranger funding. WAC stated their intent to build a strong relationship with CAPL.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	05/01/2023	OC-000375	Email	CAPL and WAC exchanged emails discussing meeting quotes, agenda, and scheduling a meeting to socialise the agenda with the WAC Board prior to the meeting in January. The Board meeting did not go ahead as CAPL met with WAC Chair on the 10th of January instead.	No objection or claim raised.		

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Wirrawandi Aboriginal Corporation RNTBC (WAC)	10/01/2023	OC-000376	Face-to-face	CAPL met with WAC to discuss the upcoming WAC/CAPL meeting planned for the 17th and 18th of January. A discussion about the CAPL and WAC relationship, past, present and future was had; and the agenda for the upcoming WAC/CAPL meeting.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	17/01/2023	OC-000274	Face-to-face	CAPL met with the board of directors, Elders' council and staff of WAC to present an overview of their upcoming offshore activities and to discuss the re-building of the relationship between CAPL and Wirrawandi. CAPL sought feedback on areas of significance and cultural values including sea country and underwater cultural heritage. The key items discussed; CAPL explained its facilities and projects, and activities covered by upcoming Environment Plans and answered questions from Wirriwandi regarding seismic, whales and environmental monitoring on Barrow Island. CAPL requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. WAC did not identify any additional relevant persons to consult.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	03/02/2023	CN-000426	Email	CAPL thanked WAC for their time in regards to the January meeting, and expressed the intent to continue to rebuild the CAPL/WAC relationship in parallel to EP consultation. CAPL provided an overview of the activity and provided a link to their website for further information regarding the activity. CAPL notified WAC that they welcome meaningful feedback.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	07/02/2023	OC-000650	Face-to-face	CAPL met with representatives of WAC to discuss actions arising from the initial meeting in January with the board of directors and Elders council of WAC.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	15/02/2023	OC-000338	Face-to-face	CAPL met with WAC rangers. WAC informed CAPL of their connection and history to country and shared their history and story.	WAC informed CAPL of their connection and history to country and shared their history and story.	**Claims have merit:** As a relevant person, WAC have provided an understanding of their connection and history to country and associated values and sensitivities.	EP was revised to include Table 4-15 , which includes specific responses from First Nations consultation in regards to cultural values or features.
Wirrawandi Aboriginal Corporation RNTBC (WAC)	16/02/2023	OC-000349	Email	CAPL informed WAC of their travel plans to Karratha and confirmed time and date to meet with CEO and Chair of the Board of Directors while in Karratha.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	22/02/2023	OC-000347	Face-to-face	CAPL engaged with representatives from WAC and continued discussions from previous board meeting in January.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	16/03/2023	OC-000350	Email	CAPL advised WAC of the proposed agenda for the board meeting in Perth. • Recap of the initial meeting between CAPL and WAC from January 2023. • Feedback on CAPL projects, CAPL will provide an overview of the upcoming projects and using a map highlight significant area(s) of concerns for WAC that surrounds the EMBA. • Re-build the relationship between WAC and CAPL by developing a guideline and structure for WAC and CAPL relationship and working group.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	22/03/2023	OC-000273	Face-to-face	CAPL met with the board of directors, Elders council and staff of the WAC to provide a follow up presentation of their upcoming offshore activities and to review draft terms of reference for joint working group to further develop governance of relationship.	WAC raised the following: 1. What species of turtles on Barrow Island. 2. When describing the environmental impacts of scenarios and emergency response process. A question was raised regarding if foam is used to reduce a hydrocarbons in a spill situation. 3. What does the inside of a gas reserve look like? And if the gas is in the form of water? 4. Is drilling process and if it is similar to the process in the deep-water horizon event? 5. Question was raised on if there are gas leaks when transporting gas. Comparation to the Iron Ore industry and the effect on environment when iron ore is transported through the loss of mineral cause by wind. 6. What is the purpose of CO2 injection?	Some of the points raised were clarifying questions or in regards to activities outside of the activity scope. CAPL has reviewed all points and assessed the merits individually. 1. **What species of turtles on Barrow Island.** Not an objection of claim - information only. However it is noted that turtles are raised as a value, and should be considered in the EP. 2. **When describing the environmental impacts of scenarios and emergency response process. A question was raised regarding if foam is used to reduce a hydrocarbons in a spill**	No change made to the EP. Threatened and/or migratory marine turtles with the potential to be present within the EMBA are discussed in Section 4.3.3.2 of the EP, and are considered in the Risk Assessment (Section 7).

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					7. Concerns were raised the process of drilling into the sea floor, that it would cause a tidal wave. Participant reflected on an example of small village being wiped out in Indonesia from a tidal wave believed to be caused by drilling. 8. Concerns were raised during the meeting about the Mercury content in the gas being extracted. As Mercury stays around for generations through the consummation of contaminated marine life. 9. Questions around the flaring at gas plants and the emissions produced by these flares – concerned when there is black smoke produced of the flare at North-west Shelf. CAPL responded to all questions raised during the meeting and encouraged WAC to get in contact should they have any further questions.	**situation.** CAPL acknowledge that information regarding spill response and consequent impacts/risk was raised. 3. What does the inside of a gas reserve look like? And if the gas is in the form of water? Not an objection of claim - information only . 4. **Is drilling process and if it is similar to the process in the deep-water horizon event?** Not an objection of claim - information only (and not relevant to this activity - no drilling within scop for the activity) 5. **Question was raised on if there are gas leaks when transporting gas. Comparation to the Iron Ore industry and the effect on environment when iron ore is transport through the loss of mineral cause by wind.** Not an objection of claim - query only 6. **What is the purpose of Co2 injection?** Not an objection of claim - query only 7. **Concerns were raised the process of drilling into the sea floor, that it would cause a tidal wave. Participant reflected on an example of small village being wiped out in Indonesia from a tidal wave believed to be caused by drilling.** Although a claim this is not relevant to this activity - no drilling is in scope for the activity. 8. **Concerns were raised during the meeting about the Mercury content in the gas being extracted. As Mercury stays around for generations through the consummation of contaminated marine life.** Although a claim this is not relevant to this activity - no gas extraction in scope for the activity. 9. **Questions around the flaring at gas plants and the emissions produced by these flares – concerned when there is black smoke produced of the flare at North-west Shelf.** Although a claim	

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						this is not relevant to this activity - no flaring or flaring plants are in scope for the activity.	
Wirrawandi Aboriginal Corporation RNTBC (WAC)	06/04/2023	OC-000351	Email	CAPL sent through minutes of previous meeting with the WAC board of directors which occurred on the 22nd of March and additional documents requested during the meeting. CAPL also requested permission of WAC members to display pictures in internal presentation for educational purposes.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	7/04/2023	OC-000275	Face-to-face	CAPL met with representative of WAC to discuss actions arising from the initial meeting in January with the board of directors and Elders council of WAC.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	26/04/2023	OC-000354	Face-to-face	CAPL met WAC representatives to discuss and agree on ongoing communications between CAPL and WAC and provide a summary of CAPL's consultations with WAC in respect to CAPL's current Environment Plans in development for WAC's approval. CAPL sent an email thanking WAC for their time, and outlining the actions that come out of the meeting for CAPL and WAC to complete.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	01/05/2023	OC-000348	Email	WAC requested an update on the outcomes, communications plan and support from Chevron further to the meeting held 18,19 January 2023. CAPL confirmed time and date of meeting with the CEO of WAC.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	15/05/2023	OC-000528	Email	CAPL advised WAC of the draft documents they have prepared in preparation for the board meeting in the following week. CAPL informed WAC that they would be happy to discuss any of the documents. Draft Consultation Response and Statement: - captures the consultation and engagements with WAC over the last 6 months and summarises the information that CAPL will include in our upcoming EP's. WAC presented and discussed with the board. Draft Engagement Plan: - capture all the possible engagement and interactions that may occur between CAPL and WAC going forward. From consultation with WAC, CAPL understands that: - The coastal area, sea country, and adjacent islands are highly valuable to the Yaburara & Mardudhunera people. Impact on these areas from a planned or unplanned event may cause harm to the cultural landscape, individuals, and the community. - Based on the current activity proposal, WAC, as representatives for the Yaburara and Mardudhunera people, has not expressed specific concerns or objections to the planned activities discussed in the consultation process. WAC has not advised CAPL of any individual Yaburara and Mardudhunera persons that has a function, interest or activity in the EMBA that we should consult with separately. - WAC requests CAPL continues engaging to gain a deeper understanding of the values and sensitivities, so emergency response plans are well informed. CAPL has committed to continue engagement with WAC and to ensure emergency response plans are well informed.	WAC raised the following: • The coastal area, sea country, and adjacent islands are highly valuable to the Yaburara & Mardudhunera people. Impact on these areas from a planned or unplanned event may cause harm to the cultural landscape, individuals, and the community. • WAC requests Chevron continues engaging to gain a deeper understanding of the values and sensitivities, so emergency response plans are well informed.	**Claim has merit:** 1. As a relevant person, WAC have provided an understanding of the values that are important to their functions, interests and activities. These must be considered to understand values and sensitivities potentially impacted by activity. 2. As a relevant stakeholder, the WACs request for continued engagement has merit.	EP was revised to include Table 4-15 , which includes specific responses from First Nations consultation in regards to cultural values or features. Table 8-5 of the EP has been revised to include an additional row for ongoing engagement with First Nations people and/or representative bodies in regards to identification and understanding of cultural values or features within the EMBA. This has not been restricted to just WAC.
Wirrawandi Aboriginal Corporation RNTBC (WAC)	26/06/2023	OC-000807	Email	CAPL sent through a list of discussion points for the meeting the following day.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	30/06/2023	OC-000808	Email	CAPL sent through an action and opportunities list following the meeting from the 27th June.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	11/07/2023- 11/07/2023	OC-000608	Email	CAPL and WAC email discussion around draft terms of agreement with respect to CAPL supporting the employment of a WAC Ranger Coordinator	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	13/07/2023	OC-000809	Email	CAPL sent an update on their actions to let WAC know how they are progressing. CAPL asked about how they would like to advance the draft document and mentioned turtle monitoring opportunities, and ranger program update and the northern seed initiative. CAPL enquired as to WAC availability to set up a meeting.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	14/07/2023- 14/07/2023	OC-000607	Email	CAPL and WAC discussion relating to ongoing activities and opportunities for consultation. WAC provided copies of NT Consultation Costs and Agreement.	No objection or claim raised.		

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Wirrawandi Aboriginal Corporation RNTBC (WAC)	26/07/2023	OC-000810	Email	CAPL sent an email following a meeting outlining the actions from their meeting with WAC.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	03/08/2023-03/08/2023	OC-000606	Face-to-face	CAPL met with the board of directors, Elders council and staff of the WAC to provide a follow up presentation of their upcoming offshore activities and to review draft terms of reference for joint working group to further develop governance of relationship.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	07/08/2023-07/08/2023	OC-000602	Email	CAPL extended solicitation of EOI for WAC to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with WAC further.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	09/08/2023	OC-000812	Email	WAC enquired as to the finalisation of the engagement plan between WAC and CAPL. CAPL responded advising that the plan was ready if WAC had no further comments.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	18/08/2023	OC-000813	Email	CAPL enquired regarding an individual member that came forward requesting to speak with CAPL. CAPL advised they were happy to speak with the individual and if WAC could make introductions. WAC responded advising they would not be engaging with the individual nor wanting to make introductions to CAPL. WAC specified that the individual was a separate entity to WAC. CAPL thanked WAC for the clarification.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	18/08/2023-29/08/2023	OC-000811	Email	CAPL requested confirmation on the Sponsorship Agreement between CAPL and Wirrawandi.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	23/08/2023-23/08/2023	OC-000627	Email	CAPL contacted WAC to confirm that a Member of WAC had contacted CAPL to nominate as a Relevant Person. CAPL confirmed that it understood that while the individual was a Member of WAC, they did not represent WAC in an official capacity and that they would be treated as a separate Relevant Person for the purposes of consultation.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	18/10/2023	OC-000851	Email	CAPL sent off an email regarding a media article in the paper regarding CAPL's environmental performance on Barrow Island. CAPL assured that all environmental obligations are taken seriously and that rigorous measures are in place to protect biodiversity. CAPL offered WAC the opportunity to meet in order to be further briefed on our environmental management of Barrow Island.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	22/10/2023	OC-000861	Email	CAPL organised to meet with WAC members and new CEO.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	01/11/2023-01/11/2023	OC-000897	Face-to-face	CAPL met WAC Chair and new CEO in Perth. CAPL provided update to new CEO about progress on the relationship and requested opportunity to meet with the new CAPL WAC Working Group on the 21st of November	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	02/11/2023-02/11/2023	OC-000888	Email	CAPL send out further information to WAC regarding CAPL movements before the end of the year. CAPL advised they would like to meet the working group before EOY and suggested 21st Nov. CAPL provided a draft agenda.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	07/12/2023	OC-000982	Email	WAC and CAPL discussed talking points for an upcoming meeting.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	08/12/2023-08/12/2023	OC-000988	Email	CAPL wrote to WAC to provide confirmation of interactions in relation to requests for facilitation and introduction to potential relevant persons for the purpose of consultation; in response to previous advice about the identification of a person wishing to be consulted separately to WAC.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	08/12/2023-08/12/2023	OC-000989	Face-to-face	CAPL met with WAC to discuss CAPL WAC working group meeting in 2024. WAC advised of meeting with BTAC to discuss Cultural Heritage Management on BWI CAPL and WAC discussed support for NNSI program.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)	21/12/2023	OC-001044	Email	CAPL sent through a 2024 planning review for consultation to prepare for the upcoming year.	No objection or claim raised.		
Wirrawandi Aboriginal Corporation RNTBC (WAC)				To summarise consultation with WAC to date: • CAPL commenced consultation with WAC on 23rd September 2022 with an introductory email and link to the Consultation Hub on CAPL's website • CAPL has met with WAC representatives in 10 face-to-face meetings and maintained contact through email and telephone correspondence			

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				• CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • CAPL has considered feedback provided by WAC during consultation, including information on WAC's functions, interests and activities within the EMBA and all claims raised have been addressed • On 15th May 2023, CAPL emailed WAC with a summary of the outcomes of consultation undertaken to date • WAC has not raised any further objections or claims relating to the activity scope as CAPL has provided a reasonable period and sufficient information to WAC 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 11A. CAPL will continue to engage WAC as part of its ongoing consultation as outlined in Section 8.3.4.1			
Woodside	14/02/2023	CN-000118	Email	CAPL advised that Woodside had been identified as a relevant organisation 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 Woodside that they welcome meaningful feedback. Woodside acknowledged receipt of email.	No objection or claim raised.		
Woodside	10/05/2023	OC-000433	Email	CAPL reached out to Woodside to provide any feedback they may have on the activity. CAPL confirmed that Woodside has not expressed specific concerns or objections to the planned activity. Woodside confirmed receipt of email and forwarded the email onto appropriate representatives that will reach out to CAPL if they have any feedback. Woodside responded stating they had no feedback regarding the activities.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	03/02/2023	CN-000324	Email	CAPL advised that the YAC had been identified as a relevant person with functions, interests or activities that may be affected by the activity. CAPL advised that they are interested in speaking to a representative of YAC about CAPL's activities. CAPL advised that they welcome meaningful feedback. CAPL acknowledged the workloads and pressures Traditional Owner Corporations are under and advised they would be available to discuss further at YAC's convenience.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	07/03/2023	OC-000327	Email	YAC contacted CAPL to confirm that they consider themselves a relevant person and to welcome consultation with CAPL. YAC requested some additional information on the Environment plans outlined in CAPL's previous correspondence as they were of a highly technical nature. YAC expressed that to ensure fully informed engagement and consultation CAPL should attend a half or full day Board meeting to present the activities and if necessary, assist in engaging an environmental scientist to advise the Board about the impact of proposed activities. This will allow the Board to draft an appropriate response to include in CAPL's EP. CAPL and YAC confirmed a meeting with its members for CAPL to present upcoming activities and answer any queries. CAPL also suggested an initial phone call to discuss details.	YAC expressed that to ensure fully informed engagement and consultation CAPL should attend a half or full day Board meeting to present the activities and if necessary, assist in engaging an environmental scientist to advise the Board about the impact of proposed activities. This will allow the Board to draft an appropriate response to include in CAPL's EP.	**Claim has merit.** As a relevant person, CAPL has the responsibility to identify the correct engagement mechanism to ensure all appropriate information is disseminated in an appropriate fashion.	Ongoing engagement with YAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and YAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge sharing, and the type and frequency of interactions. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement.
Yinggarda Aboriginal Corporation (YAC)	07/03/2023	OC-000337	Phone	CAPL spoke with representatives of YAC and were advised of a meeting time and date.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	23/03/2023	OC-000149	Face-to-face	CAPL presented to the Board of the YAC on the upcoming offshore activities and sought feedback on areas of significance and cultural values including sea country and underwater cultural heritage. Informed them of CAPL's Interaction Hub page. YAC identified Bernier and Dorre Island as being significant but that they had no access. CAPL provided clarification on the EP and OPP processes and advised YAC that they would be consulting with them soon regarding other activities. CAPL requested advice as to whether additional relevant persons not present at the meeting should be informed and consulted with. YAC did not identify any additional relevant persons to consult.	No objection or claim raised.		

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Yinggarda Aboriginal Corporation (YAC)	23/03/2023	OC-000379	Email	CAPL contacted YAC to thank them for their time and to discuss the possibility of organising another meeting in May or June to answer any follow up queries. CAPL also mentioned their intention to expand their social investment framework beyond Onslow. CAPL requested any feedback YAC may have. CAPL followed up with YAC's representative to ask if there had been any comments or feedback from the community with respect to CAPL's activities. YMAC representative for YAC contacted CAPL to advise that YMAC is no longer acting on behalf of Yinggarda. CAPL Thanked the YMAC representative for the new contact representative and their assistance.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	04/05/2023	OC-000517	Email	CAPL contacted Gumala Aboriginal Corporation following advice from YMAC that they are no longer acting on behalf of the Yinggarda Aboriginal Corporation RNTBC. CAPL requested advice from the YAC regarding: -Feedback from the meeting in March where CAPL representatives presented on proposed offshore activities. At the time, there were no specific concerns or objections to the activities. Opportunity to meet with the board again to discuss: -Feedback from our meeting in March where Brian Hayes and I presented on our offshore activities. At the time, there were no specific concerns or objections to the activities however we need to receive this feedback formally to include in our Environment Plan Submission to NOPSEMA. -Opportunity to meet with the board again to discuss: Feedback / questions on current EP submissions Ongoing consultations / Relationship – Engagement framework Potential partnership opportunities. YAC indicated that CAPLs request for feedback was to be reviewed at the YAC board meeting in June.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	08/05/2023	OC-000544	Phone	Gumala Aboriginal Corporation advised CAPL that Yinggarda's Executive services were being transferred from YMAC to Gumala Aboriginal Corporation which includes responsibility for governance and cultural heritage. Gumala Aboriginal Corporation provided CAPL with the updated contact details for consultation with Yinggarda.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	08/06/2023	OC-000548	Email	YAC requested further information from CAPL regarding CAPL's activity so it can be presented to the YAC board: 1. Has an environmental consultant been engaged to provide independent advice to the YAC Board on what is proposed? - It will be difficult for YAC to provide any useful feedback on environmental and cultural concerns, in the absence of obtaining that advice, particularly in respect of the EP submissions. 2. What does CAPL have in mind regarding Engagement framework and Potential partnership opportunities? - Can you please provide us with an understanding on what might be on the table for a sustainable future partnership with CAPL? CAPL responded: 1. It had been raised by YMAC as to whether we would provide support to YAC via YMAC for an independent environment specialist to review our information sheets. The role of the environmental specialist was not to reassess our environment assessment but to help the board understand the potential risks and impacts to their values and sensitivities. We also offered at this meeting to return to answer any questions that the board. We have received no further direction or requests from YAC in relation to this. CAPL will continue to improve the environmental management of our activities post submission of our Environment Plans to NOPSEMA and our plans will benefit from the ongoing consultations and discussions with YAC as well as all Traditional Owner groups and other Relevant Persons. This includes any specific information on values and sensitivities that are nominated from a potential review by the Environmental Consultant. 2. In terms of an engagement framework, CAPL would welcome the opportunity, based on interest from YAC, to codesign how we can share information about our activities going forward, acknowledging the burdens on people's time. We are currently investigating how we can be supporting PBC's, particularly with respect to emergency response and this was something we discussed with the Yinggarda board when we met.	1. YAC stated that it will be difficult for YAC to provide any useful feedback on environmental and cultural concerns, in the absence of obtaining specialist advice. 2. YAC queried CAPL's Engagement framework and Potential partnership opportunities for YAC	**Claims have merit:** 1. As a relevant person, CAPL has a responsibility to provide the information in a manner that enables Stakeholders to providing meaningful feedback. 2. As a relevant person, CAPL has the responsibility to identify the correct engagement mechanism to ensure all appropriate information is disseminated in an appropriate fashion.	Ongoing engagement with YAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and YAC, and once finalised will be implemented. The Engagement Plan will capture opportunities for collaboration and knowledge sharing, and the type and frequency of interactions. Section 8.3.4.1 of the EP (specifically Table 8-5) has been revised to describe the ongoing consultation with First Nations people and/or representative bodies. An additional section has been added (Section 8.3.4.3 Ongoing engagement with First Nations representative bodies) which further describes ongoing engagement.
Yinggarda Aboriginal Corporation (YAC)	06/07/2023-06/07/2023	OC-000574	Face-to-face	CAPL gave presentation to Yinggarda Board Meeting and provided the following: - OPP Information Sheet - EP update with activity map. - Chevron Community Spirit Fund Information. CAPL requested advice from the YAC Board as to how they would like to approach the development of the engagement plan for ongoing consultation and development of relationship.	No objection or claim raised.		

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Yinggarda Aboriginal Corporation (YAC)	07/08/2023-07/08/2023	OC-000596	Email	CAPL extended solicitation of EOI for YAC to participate in oil spill training in October 2023 as part of developing skills and experience for rangers as first responders, as well as continuing to develop the relationship with YAC further.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	22/08/2023	OC-000622	Email	CAPL contacted YAC via email to request sharing of information to members with respect to oil spill training.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	13/10/2023-03/11/2023	OC-000898	Email	CAPL replied to YAC via its legal representatives email requesting meeting to discuss and finalise consultation agreement in November 2023	YACs legal representatives communicated that the YAC board stated that Chevron has not consulted with YAC about any matter which might be regarded as related to a NOPSEMA regulatory process, and raised that If Chevron remains interested in consulting with this PBC in accordance with the law, then Chevron will need to first enter into a consultation agreement	**Claims have merit:** CAPL acknowledge the requirement to enter into a consultation agreement in order to facilitate engagement.	Ongoing engagement with YAC is taking place. A formal Engagement Plan is also being co-designed by CAPL and YAC, and once finalised will be implemented.
Yinggarda Aboriginal Corporation (YAC)	27/11/2023-04/12/2023	OC-000968	Email	CAPL and YAC legal representatives discussed meeting with the deputy chair of YAC to talk about an engagement plan and consultation with YAC for the future. A meeting was organised.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	07/12/2023-07/12/2023	OC-000984	Face-to-face	CAPL met with YAC and its legal representatives. YAC shared appreciation for CAPL providing a draft consultation agreement for its review. YAC requested a 1/2 day co-design workshop with CAPL in February 2024. CAPL confirmed that it would be able to provide a draft agenda prior to Christmas 2023. YAC most interested in partnership opportunities and employment. CAPL discussed incorporating environmental specialist support in meetings with YAC to help develop understanding of CAPL control measures and the opportunity to integrate Aboriginal sea and country protection into western Science.	No objection or claim raised.		
Yinggarda Aboriginal Corporation (YAC)	08/12/2023-08/12/2023	OC-000990	Email	YAC sent an email to CAPL welcoming CAPL's commitment to developing relationship with YAC. YAC advised that they would be in touch to confirm board meeting in February. To summarise consultation with YAC to date: • CAPL commenced consultation with YAC on 3rd February 2023 with an introductory email and link to the Consultation Hub on CAPL's website • CAPL has met with YAC representatives in 2 face-to-face meetings and maintained contact through email and telephone correspondence • CAPL has presented sufficient information in accordance with Section 6.2.2 of the EP on the activity scope, including the activity description, EMBA, potential impacts and risks and control measures • CAPL has considered feedback provided by YAC during consultation, including information on YAC's functions, interests and activities within the EMBA and all claims raised have been addressed • CAPL is progressing a consultation agreement with YAC to facilitate future engagement. • YAC has not raised any further objections or claims relating to the activity scope as CAPL has provided a reasonable period and sufficient information to YAC 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 11A. CAPL will continue to engage YAC as part of its ongoing consultation as outlined in Section 8.3.4.1	No objection or claim raised.		
Yamatji Marlpa Aboriginal Corporation (YMAC)	05/10/2022	CN-000536	Email	CAPL advised 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 advised that they welcome meaningful feedback.	No objection or claim raised.		
Yamatji Marlpa Aboriginal Corporation (YMAC)	03/01/2023	OC-000313	Email	CAPL contacted YMAC for early engagement to provide an overview of their current approach to consultation and upcoming activities and Environment plans. CAPL offered to meet and discuss future communication protocols to build a relationship with YMAC. YMAC contacted CAPL to discuss consultation obligations under the OPGGS(E)R 2009. YMAC communicated the surge of consultation requests following the federal court decision resulting in the development of a procedure protocol for consultations. YMAC suggested availability for informal meeting. CAPL acknowledged YMAC's email and pressures following the court's decision. CAPL and YMAC organised a time to meet.	No objection or claim raised.		
Yamatji Marlpa Aboriginal Corporation (YMAC)	02/02/2023	OC-000341	Face-to-face	CAPL met with YMAC and had a very positive meeting. YMAC advised CAPL of their intention to assist in introductions to other traditional owners. YMAC requested referrals for independent environmental advisors to better comprehend the Environment plans and impacts, to make informed decisions.	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
Yamatji Marlpa Aboriginal Corporation (YMAC)	03/02/2023	OB-000314	Email	CAPL advised that the YMAC 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 YMAC that they welcome meaningful feedback. CAPL thanked YMAC for their assistance and for the opportunity to build a relationship between the organisations. Additionally, CAPL provided YMAC with a written notice to pass on to relevant traditional owner corporations. Due to the distance from the boundary of the EMBA to the determined areas of the groups represented by the Malgana Aboriginal Corporation (MAC) and Nanda Aboriginal Corporation (NAC), MAC and NAC were not considered to be relevant persons for the purpose of this EP.	YMAC identified additional potential relevant persons.	**Claims have merit:** The identified stakeholders have the potential to be impacted by CAPL activities, therefore it is reasonable and appropriate to conduct engagement.	No change made to the EP. The additional stakeholders identified during consultation were engaged with (except Nanda Aboriginal Corporation, which is outside the EMBA for this activity).
Yamatji Marlpa Aboriginal Corporation (YMAC)	22/02/2023	OC-000316	Email	CAPL connected with YMAC to request if any further correspondence relating to forwarded Environment Plans was needed. YMAC advised CAPL of best correspondence methods to contact PBCs directly.	No objection or claim raised.		

appendix e subsea inventory summary

The following table provides the status of subsea infrastructure associated with the Jansz–Io Deepwater Gas Field Development and within pipeline licence WA-19-PL and production licence WA-39-L (current as of April 2024).

Item	Petroleum title^	Status	IM Plan	EP reference
Wells				
JZI-2B	**WA-39-L**	Operational	In place	Refer to the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 6)
JZI-2C	**WA-39-L**	Operational	In place	
JZI-2D	**WA-39-L**	Operational	In place	
JZI-2E	**WA-39-L**	Operational	In place	
JZI-2F	**WA-39-L**	Operational	In place	
Manifolds				
Jansz DC-1 manifold	WA-36-L, **WA-19-PL**	Operational	In place	Refer to the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 6)
Jansz DC-2 manifold	**WA-39-L**, **WA-19-PL**	Operational	In place	
Jansz DC-3 combined manifold/PTS module	WA-36-L, **WA-19-PL**	Operational	In place	
Pipeline termination structures				
Jansz-Io Midline PTS	**WA-39-L**, **WA-19-PL**	Operational	In place	Refer to the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 6)
Jansz DC-3 combined manifold/PTS module	WA-36-L, **WA-19-PL**	Operational	In place	
Production pipelines and support infrastructure				
Production pipeline (1)	WA-14-R, WA-19-R, WA-20-R, WA-24-R, WA-37-L, **WA-39-L**, WA-42-R, **WA-19-PL**	Operational	In place	Refer to the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 6)
8” MEG pipeline (1)	WA-14-R, WA-19-R, WA-20-R, WA-24-R, WA-37-L, **WA-39-L**, WA-42-R, **WA-19-PL**	Operational	In place	
6” utility pipeline (1)	WA-14-R, WA-19-R, WA-20-R, WA-24-R, WA-37-L, **WA-39-L**, WA-42-R, **WA-19-PL**	Operational	In place	
Infield flowlines				
24” CRA infield production flowlines (2)	WA-36-L, WA-39-L	Operational	In place	Refer to the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 6)
18” DC-3 CRA infield production flowline (2)	WA-36-L	Operational	In place	
6” MEG pipelines (3)	WA-36-L, WA-39-L	Operational	In place	
6” utility pipelines (3)	WA-36-L, WA-39-L	Operational	In place	

Item	Petroleum title^	Status	IM Plan	EP reference
Primary control umbilicals and support infrastructure				
Fibre-optic and electrohydraulic control umbilical bundle (1)	WA-14-R, WA-19-R, WA-20-R, WA-24-R, WA-37-L, **WA-39-L**, WA-42-R, **WA-19-PL**	Operational	In place	Refer to the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* (Ref. 6)
Jansz CDU (1)	**WA-39-L**, **WA-19-PL**	Operational	In place	

^ *Only CAPL-operated petroleum titles shown.*

appendix f J-IC project development process and considerations for subsea sound emissions during operations

J-IC Project Development Process and Considerations for Subsea Sound Emissions during Operations

1.1 Purpose

The purpose of this Appendix is to provide an overview of the procedures and processes implemented during the design and development phases of the Jansz–Io Compression (J-IC) Project to ensure the operating phase is consistent with relevant regulatory requirements relevant to subsea sound emissions, including the requirements of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (OPGGS Act).

Note: Subsea sound emissions during operations is a relevant environmental aspect associated with petroleum activity that is the subject of the *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan*. This overview does not replace the impact and risk assessment process (including activity description, identification and evaluation of impact and risks, and demonstration that these impacts and risks will be managed to as low as reasonably practicable [ALARP] and acceptable levels) as required under Division 2 of Part 4 of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) (OPPGS(E)R) that is required as part of the revised[1] *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan* that is being prepared and will be submitted separately to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment.

1.2 CPMS

The Chevron Project Management System (CPMS) is a tool used by Chevron Business Units to support the development and delivery of capital projects. The CPMS is underpinned by a five-stage phase gate governance framework (Figure 1):

- Phase 1—identify the opportunity
- Phase 2—select concept, initial investment decision (IID), and pre-front end engineering design (FEED)
- Phase 3—define the project, FEED, and final investment decision (FID)
- Phase 4—execute the project
- Phase 5—operate the asset.

Projects are progressed through phases when ready, based on opportunity and project-specific conditions precedent being met. Project execution plans are developed in alignment with Chevron Corporation's Operational Excellence Management System (OEMS) and the Operational Excellence Culture for Capital Projects framework. The project execution planning process is implemented in a through-phase, iterative manner, focused on performing work in the proper sequence, identifying/managing interfaces, and mitigating risks/uncertainty.

Risk management provides a systematic process to proactively and transparently identify, assess, and prioritise risks—followed by action to mitigate, manage, and monitor—bringing the probability or consequences to an acceptable level. The CPMS requires project teams to define and assess risks and develop mitigation plans throughout the phase gate framework (Figure 1, Figure 2).

[1] The *Gorgon and Jansz Feed Gas Pipeline and Wells Operations (Commonwealth Waters) Environment Plan* is being revised to incorporate the operation of the J-IC infrastructure. Consultation with relevant persons is planned to commence for this Environment Plan (EP) revision in H1 2024, with submission to NOPSEMA during H2 2024.

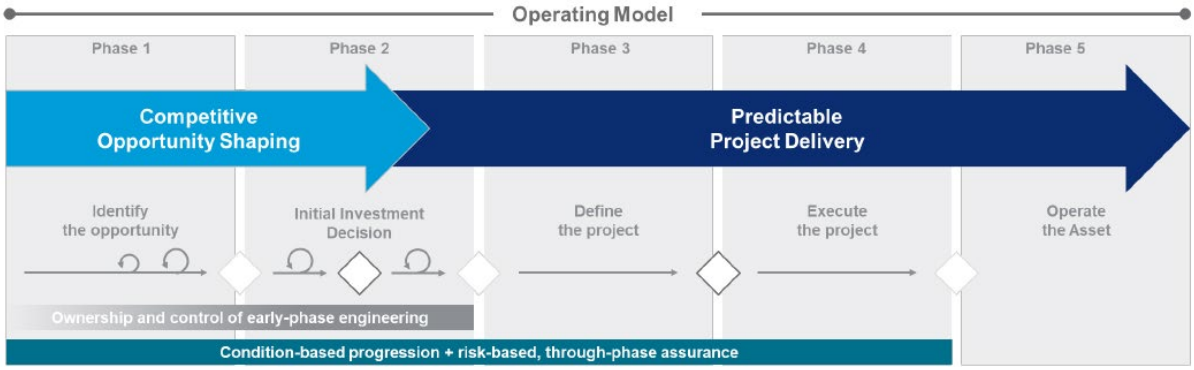


Figure 1: CPMS framework

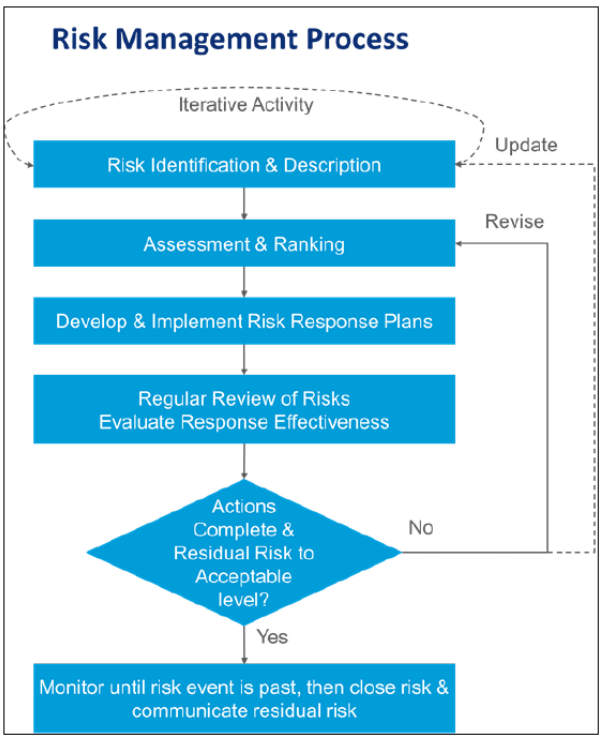


Figure 2: CPMS risk management process

1.3 J-IC Project

The scope of the J-IC Project comprises:

- a Subsea Compression Station (SCSt) to separate, compress and pump the production fluids
- a Subsea Compression Manifold Station (SCMS) to allow connection of the SCSt to the existing Jansz Mid-line Pipeline Termination Structure (MPTS) and accommodate potential future tie-ins
- a floating Field Control Station (FCS) to support the power and control requirements of the SCSt along with some provision for potential future tie-ins
- a High Voltage Submarine Cable (HVSC) to transmit power from Barrow Island (BWI) to the FCS

- medium voltage (MV) umbilicals to transmit MV power and communications between the FCS and SCSt
- an MV umbilical to transmit MV power and communications between the FCS and the existing Jansz Central Distribution Unit (CDU).
- BWI power and control system modifications to distribute the required power to the offshore facilities as well as allowing remote control and monitoring of the offshore facilities from BWI.

Chevron Australia Pty Ltd (CAPL) utilised the CPMS framework for the design and development of the J-IC Project. The J-IC Project is currently in Phase 4, having completed Phase 3 activities and announced FID in mid-2021.

The following sections summarise specific processes undertaken during early CPMS phases related to environmental management of the J-IC Project, with particular focus on the offshore scopes in Commonwealth waters and subsea sound emissions during operations. The intent of these processes is to identify the project risks and ensure that they are managed to an acceptable level.

1.3.1 OEMS

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 system - Requirements with guidance for use* (Ref. 1). 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 Operational Excellence (OE) requirements.

1.3.1.1 Risk management

The *ABU OE Risk Management Process* (Ref. 2) 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 Risk Management Process is designed to be consistent with the environmental risk management requirements of *ISO 14001 Environmental Management System* (Ref. 1) and *ISO 31000:2018 Risk management – Principles and guidelines* (Ref. 3).

1.3.1.2 Environmental stewardship

The *Environmental Stewardship: ABU Standardised OE Process* (Ref. 4) is designed to identify, assess, and manage potentially significant environmental impacts in a consistent manner and continually improve environmental performance. For the J-IC Project this was implemented via the Environmental Social and Health Impact Assessment (ESHIA) process described below.

1.3.2 ESHIA

The *Environmental Social and Health Impact Assessment (ESHIA) – ABU Standardised OE Process* (Ref. 5)[2] is designed to identify and address potentially significant project-related environmental, social, or public health impacts in a prescribed manner and enables incorporation of ESHIA elements into business decision-making throughout early stages of

[2] Note: The ESHIA Process has since been superseded by the ABU Environmental Risk Management Process (ERMP).

the CPMS. The ESHIA Process consists of five procedures: screening, scoping, impact assessment, stakeholder engagement, and the ESHIA management plan.

1.3.2.1 Screening and scoping

An ESHIA screening and scoping workshop was held for the J-IC Project during CPMS Phase 2.

ESHIA *screening* is a high-level evaluation to determine if the project alternatives may involve potentially significant environmental, social, or public health impacts. ESHIA *scoping* defines the scope of the impact assessment based on the potentially significant environmental, social and public health impacts identified during the screening procedure.

The screening and scoping workshop identified several “potentially significant” or “unknown” risks. Of the potentially significant impacts, none were classified as “potentially insurmountable” as defined in the ESHIA Process. For each of the potentially significant or unknown risks, a data gap assessment was undertaken to evaluate the quality and completeness of existing data and determine what additional information was required to proceed with impact assessment and stakeholder engagement processes.

One of the potentially significant risks identified in the screening and scoping workshop was related to potential impacts to threatened or sensitive species. A data gap relating to subsea sound levels from the SCSt and any subsequent potential impacts on marine fauna was identified. Recommendations were identified during the ESHIA screening and scoping workshop to close this (and other) data gaps to allow for subsequent impact assessment processes to occur.

1.3.2.2 Impact assessment

As potentially significant impacts were identified during the screening procedures, the ESHIA Process requires an impact assessment to be undertaken. Within Chevron’s Australian operations, where stringent regulatory Health, Safety and Environment (HSE) requirements apply, impact assessment undertaken to develop regulatory approval documents (e.g. EPs) generally meets the intent of ESHIA Process, and duplication with these processes is not required.

As such, impact assessments for the J-IC Project were undertaken in alignment with *ESHIA Impact Assessment – ABU Standardized OE Procedure* (Ref. 6) and relevant regulatory requirements and guidelines.

1.3.2.3 ESHIA management plan

An overarching environmental management plan (EMP) for the J-IC Project was developed during Phase 4, which also fulfils the requirements of the ESHIA Process. The EMP describes the relevant environmental management and compliance requirements, for both Australian regulatory and Chevron Corporation, for the J-IC Project.

1.3.3 Project IHAZID

An Integrated Hazard Identification (IHAZID) workshop was held for the J-IC Project during CPMS Phase 2. The IHAZID referred to the ESHIA for an assessment of potential impacts and risks to transient marine fauna.

1.3.4 Scope HAZIDs

A HAZard IDentification (HAZID) is a structured review technique to identify OE hazards and to analyse OE risks associated with a particular concept, design, operation, or activity.

HAZIDs are conducted in accordance with the *ABU OE Risk Management Process* (Ref. 2) and the *ABU OE Risk Management HAZard IDentification (HAZID) Standard* (Ref. 7).

A HAZID workshop process typically involves these steps:

- identify hazards
- identify potential causes of the hazards
- determine the worst-case credible consequence associated with the hazards, and rank the consequence using the Chevron Integrated Risk Prioritisation Matrix
- identify preventative and mitigative safeguards
- determine the likelihood and residual risk ranking using the Chevron Integrated Risk Prioritisation Matrix
- if there are elevated residual risks, identify recommendations to further address risk reduction opportunities.

HAZID workshops were held for various scopes of the J-IC Project during CPMS Phase 3, and involved both CAPL personnel and Engineering, Procurement & Construction Management (EPCM) contractor specialists.

One of these Phase 3 HAZIDs was conducted with the Aker Solutions (EPCM contractor responsible for the SCSt). Outcomes of the HAZID included an elevated risk ranking and subsequent recommendations for addressing the hazard and potential consequences associated with subsea sound emissions during operations from the SCSt.

1.3.5 ENVID

The objectives of an Environmental Impact Identification (ENVID) workshop are similar to those of a HAZID, but with the focus on environmental impacts and risks. The outcomes of ENVID workshops provides information to support the impact and risk assessments presented in regulatory approval documents (e.g. EPs).

Multiple ENVID workshops have been undertaken for the J-IC Project during CPMS Phases 3 and 4. The suite of workshops included risk assessments for the full life-cycle of petroleum activities within scope for the J-IC Project (e.g. installation, operation, decommissioning) and included both CAPL personnel and EPCM contractor specialists.

Subsea sound emissions was identified as a relevant aspect for consideration during multiple phases of the J-IC Project, including during operations from the SCSt.

1.3.6 Phase 4 Management Plans

The *J-IC Phase 4 Project Delivery Plan* (Ref. 8) describes the execution strategy to be employed across the various J-IC delivery packages, the organisational structure and key risks and mitigations (including scenario planning) and the support of key business functions to successfully deliver the J-IC Project. The intent of identifying execution risks is to capture potential scenarios which still exist and how these scenarios can be addressed and mitigated.

The *J-IC Phase 4 Risk Management Plan* (Ref. 9) describes the requirements to implement and monitor the performance of the project risk management process during Phase 4. The Risk Management Plan supports the Project Delivery Plan by establishing the risk management process to support the achievement of project business objectives. Subsea sound emissions from the SCSt during operations has been identified as a project risk within the Risk Management Plan.

A subsea sound management strategy for the J-IC Project was developed in collaboration with independent experts from Curtin University's Centre for Marine Science and Technology (CMST), to address data gaps to ensure that the risk associated with SCSt sound emissions during operations could be appropriately defined, evaluated, and managed to ALARP and acceptable levels. The strategy was guided by the EP content requirements of the OPGGS(E)R and NOPSEMA's acoustic impact evaluation and management information paper (Ref. 10).

1.4 Subsea sound emissions during operations

As described above, subsea sound emissions from the SCSt during operations were identified as a potential environmental risk during the early phases of the J-IC Project development. To address data gaps, and subsequently allow the risk to be considered during detailed engineering design, CAPL has undertaken multiple studies (aligned with the subsea sound management strategy) as summarised below.

1.4.1 Sound source level

The SCSt for the J-IC Project is based on replication of the Åsgard Subsea Compression Project components to minimise the technology qualification step-out and maximise the reliability and uptime of the compression system (Ref. 8). The Åsgard facility consists of two compressors of the same type being used as part of the J-IC SCSt (which will have three compressors).

Multiple studies, including involvement of EPCM contractors and acoustic specialists, have been undertaken to assist CAPL in determining an estimated sound source level for the SCSt. Key steps undertaken to date have included:

- Aker Solutions undertook a review of subsea equipment to identify critical acoustic sources for the SCSt
  - the main acoustic sources identified for the SCSt were the compressors, pumps, transformers, and piping items; of these, the compressors and pumps were expected to dominate the acoustic source profile of the SCSt
- Aker Solutions provided in-air sound pressure level measurements for a similar compressor to that proposed for the SCSt
- MAN Energy Solutions (supplier of the SCSt compressors) provided an in-air sound power prediction for the compressor unit
- acoustic models were established by two independent acoustic expert groups—Curtin University's CMST and Novicos GmbH—to determine sound source spectra and broadband source levels for the SCSt based on the available in-air data and conversion to in-water levels
  - CMST used the in-air measured data to estimate the in-air radiated sound power from a compressor and pump as a function of frequency, and then used a finite element model (FEM) to convert these to in-water sound power, and then to source level spectra
  - initial modelling by CMST confirmed that the source spectra for the SCSt was dominated by the compressors (as was expected given the higher power rating and greater number of compressors compared to pumps on the SCSt)
  - Novicos GmbH developed a 3D FEM of the SCSt compressor modules incorporating the compressors, interconnecting piping and structures), as well as compressor internals

- in situ measurements of received underwater sound levels were undertaken by TNO at various distances and depths from Equinor's Åsgard Subsea Compression Project
  - in situ measurements occurred during stable compressor operating conditions
  - results of the in situ measurements and derived source spectra and broadband source level for the Åsgard facility were independently reviewed
- acoustic models and estimated source spectra and sound levels for the J-IC SCSt were revised to incorporate the measured in-water data in place of the previous in-air measurements
- a Factory Acceptance Test (FAT) was undertaken by MAN Energy Solutions for the J-IC compressor units and further in-air measurements were collected under differing operating conditions
  - acoustic models for the J-IC SCSt were revised to incorporate the FAT in-air data.
  - source spectra and broadband source level for the J-IC compression units were independently modelled using the in-air measurements
  - broadband source levels were derived for varying operating conditions (e.g. start-up, maximum power, etc.)
- the range of source levels derived from the J-IC FAT in-air measurements aligned to source levels derived from the Åsgard in-water data.

Preliminary estimates of worst-case sound emissions (i.e. when operating under maximum compressor power) indicate the broadband source levels are of a similar magnitude to the cable lay vessels associated with installation activities (refer to Section 7.6.1 of this Installation and Pre-commissioning EP). Preliminary estimates of sound source levels for initial start-up and more typical (i.e. not maximum power) operating conditions for the SCSt are lower.

CAPL are currently undertaking further sensitivity and verification analyses of the worst-case estimated source levels for the SCSt to refine the FAT measurements and conversions for the compressor units, and to address the uncertainty of source contributions from the other (e.g. pumps, piping) components of the SCSt. The final estimated sound source level for the SCSt will be presented within the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan.*

Final source level verification is planned for post-commissioning and start-up of the J-IC SCSt via an in situ underwater sound measurement campaign; this verification step will be incorporated into the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan.*

1.4.2 Predicted received levels

Multiple acoustic propagation studies by acoustic modelling specialists have been undertaken to assist CAPL in determining the potential extent of ensonified areas for received sound levels from the operation of the SCSt. Key steps undertaken to date have included:

- acoustic models were established by two independent acoustic expert groups—Curtin University's CMST and JASCO Applied Sciences—to predict the acoustic propagation within the receiving environment based on the estimated SCSt source spectra and broadband source levels
- JASCO also undertook animat exposure modelling for Pygmy Blue Whales

- initial modelling by CMST and JASCO was based on the preliminary in-air source spectra and sound levels
- the acoustic propagation and animat models were refined to incorporate the source levels based on the in-water Åsgard measurements
- the acoustic propagation and animat models were refined again to incorporate the source levels based on the in-air FAT measurements of the J-IC compressor units.

The acoustic modelling considers both the source level of the J-IC SCSt (under continuous operation) as well as environmental properties that influence the propagation of subsea sound. The effect criteria thresholds used in the acoustic modelling are based on current best available science:

- frequency-weighted accumulated sound exposure levels (SEL_{24h}) from Southall et al (Ref. 11) for the onset of permanent threshold shift (PTS)[3] and temporary threshold shift (TTS)[4] in marine mammals
- un-weighted sound pressure level (SPL) for behavioural threshold for marine mammals based on the current interim US National Oceanic and Atmospheric Administration (NOAA) criteria (Ref. 12)
- frequency-weighted accumulated sound exposure levels (SEL_{24h}) from Finneran et al (Ref. 13) for the onset of PTS and TTS in marine turtles
- sound exposure guidelines for behavioural effects in marine turtles from Popper et al (Ref. 14)
- sound exposure guidelines for fish, fish eggs, and larvae from Popper et al (Ref. 14).

Given the location of the J-IC SCSt in deep water (~1,345 m), the deep ocean sound channel (centre estimated at ~800–1,000 m water depth at J-IC location) has the most significant effect on propagation of subsea sound emissions from the SCSt. Upward travelling energy away from the SCSt is refracted downward, and energy reflected from the seabed is also refracted back downward, which results in a large amount of acoustic energy occurring in the lower water column and less acoustic energy propagating into the upper water column.

Preliminary results from the most recent acoustic models (i.e. those based on FAT derived source spectra and sound levels) indicate that exposure to received levels above effect criteria thresholds for auditory impairment or injury (SEL_{24} for TTS and PTS), are not anticipated to occur. Given the magnitude of the estimated SCSt source level, and the propagation characteristics in deep water (e.g. refraction downwards from deep sound channel), the preliminary acoustic modelling also indicates that the predicted ensonified area above the effect criteria for behavioural response for marine mammals occurs in the lower parts of the water column but does not extend into the upper water column.

1.4.2.1 Relevant Pygmy Blue Whale migratory and foraging behaviour

Pygmy Blue Whales are known to migrate along the west coast of Australia in the northern direction to their breeding grounds near the Indonesian Archipelago, and in the southern direction to the feeding grounds in the Southern Ocean. Blue Whales have the highest known prey requirements of any predator, and Foraging Areas are therefore generally associated with areas of high primary productivity that can support sufficient densities of krill, such as oceanographic upwelling or frontal systems (Ref. 19). Australia has two known

[3] PTS is a physical injury to an animals hearing organs.

[4] TTS is a temporary reduction in an animals hearing sensitivity due to receptor hair cells in the cochlea becoming fatigued.

seasonal feeding aggregations of Pygmy Blue Whales supported by upwelling systems located at the Perth Canyon (Western Australia) and the Bonney Upwelling system and adjacent waters (South Australia, Victoria) (Ref. 19). The areas around the Perth Canyon and Bonney Upwelling system correspond to 'Foraging Areas'[5] and 'Known Foraging Areas' within the *Conservation Management Plan for the Blue Whale* (Ref. 19). The *Conservation Management Plan for the Blue Whale* (Ref. 19) also identifies 'Possible Foraging Areas'[6], including two in WA, one off the Ningaloo coast, and another around Scott Reef. Although foraging areas are described as static within the *Conservation Management Plan for the Blue Whale*, they are likely to be dynamic given their dependence on presence of prey (Ref. 22).

Based on a tagging study of an individual Pygmy Blue Whale[7] (Ref. 15), three types of movement behaviour were identified:

- migratory movements were predominantly observed in water depths of <24 m (mean bottom depth of 14±4 m); and the depth of migratory dives was highly consistent over time and unrelated to local bathymetry
- exploratory dives (with no feeding lunge) were identified with a mean maximum depth of 107±81 m (range 23–320 m)
- feeding behaviours (lunge dives) were identified with a mean maximum depth of 129±183 m (range 13–505 m) and a mean dive duration of 5.2 minutes for shallow feeding and 11.4 minutes for deep feeding.

Other studies on feeding behaviours of Pygmy Blue Whales (e.g. Torres et al. [Ref. 16] on the west coast of New Zealand; and Gill [Ref. 17] on the southern coast of Australia) have shown correlations with feeding at shallow water depths and the presence of krill swarms. Backscatter data also indicated that Pygmy Blue Whales were feeding throughout a 90 m water column (location on the continental shelf) during part of the southern Australia study (Ref. 17).

The University of Western Australia (UWA) was commissioned by CAPL to undertake a desktop analysis of oceanographic and environmental factors within a 100 km radius of the proposed location of the J-IC SCSt. Specialists from UWA reviewed several datasets (including bathymetry, ocean currents and eddies, sea surface temperature, and sea surface chlorophyll) and determined that there were no specific oceanographic features within the vicinity of the J-IC SCSt location that may lead to higher primary productivity and/or an increased likelihood of foraging Pygmy Blue Whales (or other marine mammals). As such, regular or intensive use of the J-IC location as a foraging area is not anticipated to occur.

1.4.2.2 Predicted sound levels and potential for interaction with Pygmy Blue Whales

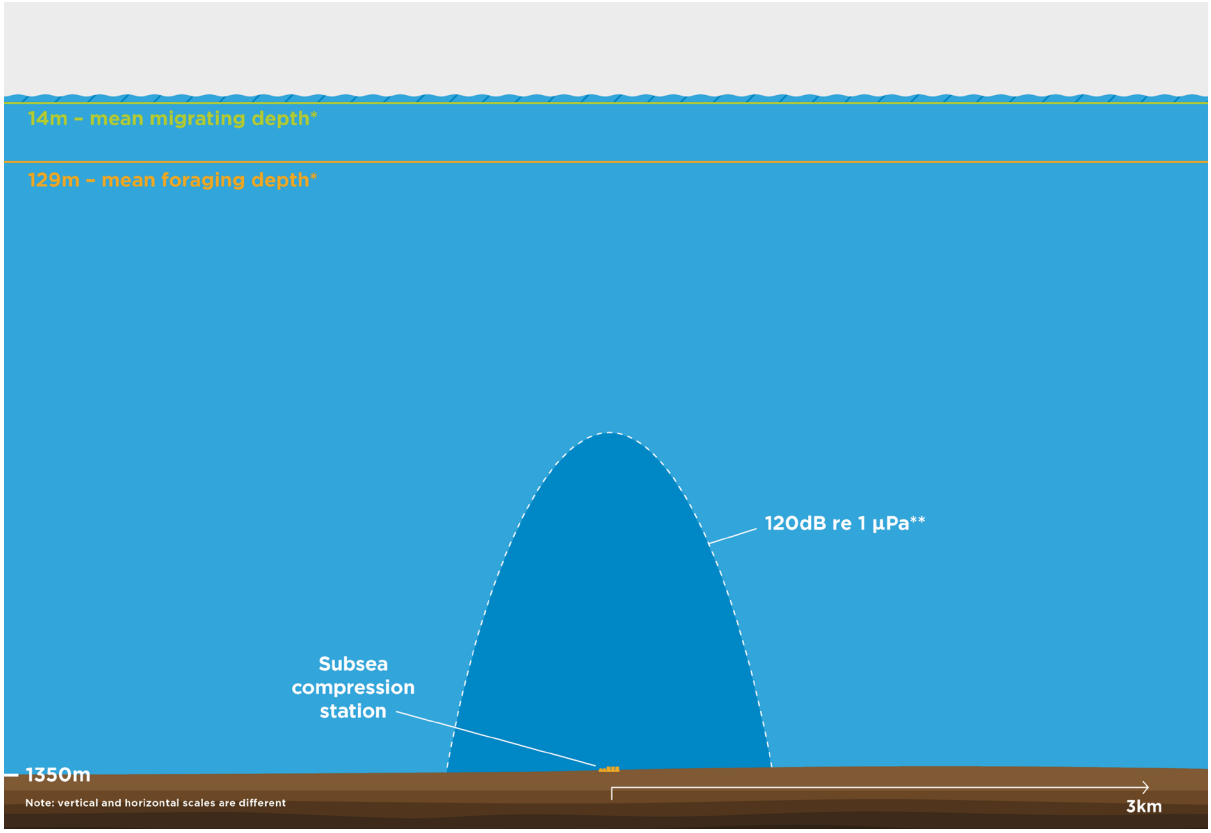
Based on acoustic modelling using the current predicted worst-case source level for the J-IC SCSt, and on known migratory and feeding behaviours of Pygmy Blue Whales at other locations in Australia and New Zealand, exposure to underwater sound in the upper water

[5] The *Conservation Management Plan for the Blue Whale* (Ref. 19) defines a Foraging Area as "Blue whales are regularly observed on a seasonal basis", and a Known Foraging Area is "[k]nown foraging occurs in these areas but is highly variable both between and within seasons".

[6] The *Conservation Management Plan for the Blue Whale* (Ref. 19) defines a Possible Foraging Area as "[e]vidence of feeding is based on limited direct observations or through indirect evidence, such as occurrence of krill in close proximity to whales, or satellite tagged whales showing circling tracks. Blue whales travel through on a seasonal basis, possibly as part of their migratory route".

[7] The Pygmy Blue Whale was tagged ~35 nautical miles north of the Perth Canyon; after tagging the whale travelled north. Data was recorded for ~7.6 days until the tag fell off when the Pygmy Blue Whale was off the coast of Geraldton (Ref. 15).

column (i.e. where migration and foraging are expected) at levels that may cause a behavioural response in Pygmy Blue Whales is not anticipated to occur (Figure 3). Further acoustic propagation modelling may be considered depending on the results of the in situ SCSt source verification measurements; this adaptive management step will be incorporated into the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan.*



** Mean bottom depth for migration and mean maximum depth for foraging as observed from a Pygmy Blue Whale tagging study between Perth and Geraldton (Ref. 15).*

*** Behavioural response effect criteria for marine mammals is a SPL of 120 dB re 1 µPa (Ref. 12).*

Figure 3: Schematic of predicted marine mammals behavioural response ensonified area from preliminary acoustic modelling of SCSt subsea sound emissions (based on current source level estimates for J-IC compressors)

1.4.3 Control measures and ALARP

Control measures are assigned to an aspect with the objective to eliminate, prevent, reduce, or mitigate consequences associated with each identified environmental impact and risk.

Multiple studies, including involvement of EPCM contractors and acoustic specialists, have been undertaken during CPMS Phase 3 (FEED) of the J-IC Project to assist CAPL in determining appropriate engineering design controls that could be implemented to manage subsea sound emissions from the SCSt during operations.

Initial scoping work was undertaken to evaluate, define, and recommend potential acoustic mitigation opportunities suitable for use on the SCSt. The following acoustic abatement solutions and/or best practice manufacturing methods were identified for consideration:

- Option 1—pipe duct resonator array (PDRA), a proven technique for topside compressor discharge (and inlet) piping but novel for subsea use

- Option 2—gas-filled resonator array (GFRA), shallow water bubble curtains adapted for deep-water use
- Option 3—acoustic insulation, technology adapted from defence industry uses
- Option 4—compressor motor stator, enhanced motor manufacturing process to shrink-fit motor stator
- Option 5—elastomeric dampener, vibration isolation between structures to reduce structure borne sound emissions and associated propagation to mud mats from the SCSt Module Support Frame (MSF).

Further studies were undertaken by CAPL and the Chevron Technology Centre (CTC) on the above options led to decisions to:

- implement Option 4 (compressor motor stator)
  - due to the relative low complexity this option has been incorporated by MAN Energy Solutions during manufacturing of the motors for the three J-IC compressors
- continue further investigations into Options 1, 2, and 3 (PDRA, GFRA, and acoustic insulation)
- stop investigations on Option 5 (elastomeric dampener)
  - in comparison to the compressor-related sound emissions, the structural borne sound emissions were determined to be a minor contributor to the overall sound emissions from the SCSt, and dampeners were considered unlikely to reduce the overall SCSt sound source level.

Further detailed research, technology development, engineering design, and acoustic modelling (to predict the sound attenuation performance) were undertaken for Options 1, 2, and 3. The current status of this work is:

- Option 1 (PDRA)—The sound path along the pipe can be reduced in the range of the blade passing frequency with the use of PDRAs. However, the use of PDRAs likely increases the sound emissions in close vicinity of the SCSt, which is caused by vibrations of the resonators that excite the structural parts of the pipes and therefore radiate into the water. Due to the potential for increase in the source level emitted by SCSt due to the PDRAs, this option has not been selected for implementation.
- Option 2 (GFRA)—GFRA are unproved technology for deep water applications. Extensive technology development and integration concept development was undertaken and concluded major uncertainties around the effectiveness of this solution due to estimated high gas dissolution rate at Jansz design conditions. Further, no feasible solution for utility supply, fill/re-fill, and maintenance requirements were identified. This option has not been selected for implementation due to the uncertainties and lower than expected acoustic performance for Jansz sound spectrum.
- Option 3 (acoustic insulation)—Extensive technology development and material testing has been undertaken to assess different anechoic acoustic tile attenuation performance at ~1,350 m water depth across the predicted SCSt frequency range. This option is undergoing further assessment, including acoustic modelling assessments into the potential performance of different materials and designs to determine potential environmental benefit.

In accordance with the requirements of the OPGGS(E)R, demonstration of control measures to reach ALARP will form part of the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan*, and will include engineering design controls that have been investigated during detailed engineering design phase for the J-IC Project.

1.4.4 Impact and risk acceptance criteria

NOPSEMA provides guidance on demonstrating that impacts and risks will be of an acceptable level (Ref. 18). 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 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), consistent with relevant policies, guidelines, threatened species recovery plans, management plans, management principles etc.
- internal context (titleholder policy, culture, processes and systems)
- external context (existing environment, relevant persons consultation).

With specific consideration to matters protected under Part 3 of the EPBC Act, there are objectives and actions identified within recovery plans that will be considered as part of determining acceptability of the risks and impacts for the activities contained in the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan*, including:

- *Conservation Management Plan for the Blue Whale* (Ref. 19)
  - 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
  - Action A.2.3—anthropogenic noise in biologically important areas (BIAs) will be managed such that any blue whale continues to utilise the area without injury, and is not displaced from a foraging area
- *Recovery Plan for Marine Turtles in Australia* (Ref. 20)
  - 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
  - Action A1.5—manage anthropogenic activities to ensure marine turtles are not displaced from identified habitat critical to the survival of the species
  - Action A1.6—manage anthropogenic activities in BIAs to ensure that biologically important behaviour can continue

The J-IC SCSt occurs within the migration BIA for Pygmy Blue Whales. Based on the current worst-case estimated source levels and preliminary acoustic propagation modelling (as described above in Sections 1.4.1 and 1.4.2), injury[8] to Pygmy Blue Whales within this BIA is not anticipated. Displacement from a foraging area[9] is also not anticipated given Pygmy Blue Whale's use of the upper water column for feeding and the occurrence of the received

[8] Regulatory guidance has defined "injury to Blue Whales" as both PTS and TTS hearing impairment, as well as any other form of physical harm arising from anthropogenic sources of underwater sound (Ref. 21).

[9] Regulatory guidance notes that in areas other than those identified in the *Conservation Management Plan for the Blue Whale* "where it can be reasonably predicted that blue whale foraging is probable, known or whale presence is detected, adaptive management should be used during industry activities to prevent unacceptable impacts (i.e. no injury or biologically significant behavioural disturbance) to blue whales from underwater anthropogenic noise" (Ref. 21).

sound levels above the behavioural response effect threshold in the lower water column. Therefore, based on current estimates of subsea sound emissions, the operation of the J-IC SCSt is not anticipated to be inconsistent with the *Conservation Management Plan for the Blue Whale*.

CAPL are currently undertaking further sensitivity and verification analyses of the predicted worst-case source levels for the SCSt. In recognition of this residual uncertainty CAPL will include adaptive management controls within the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan*, including a commitment that the SCSt will be operated such that received sound levels within relevant foraging depths for Pygmy Blue Whales are below the behavioural response threshold. The intent of this adaptive management control measure is to confirm that the petroleum activity (i.e. the operation of the J-IC SCSt) would not be undertaken in a manner that is inconsistent with the *Conservation Management Plan for the Blue Whale.* A description of how this control will be implemented, including both the application of operational controls and scientific basis for foraging depths (and process for ongoing review as new data is available), will be provided within the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan.*

CAPL are also investigating the potential for site-specific Pygmy Blue Whale monitoring studies that will provide local context to managing impacts and risks of their activities, but also increase the knowledge of Pygmy Blue Whale behaviour in the broader North West Shelf region.

The J-IC SCSt is located >50 km from the nearest BIA or habitat critical to the survival of a marine turtle species. Therefore, based on current estimates of subsea sound emissions, the operation of the J-IC SCSt is not anticipated to be inconsistent with the *Recovery Plan for Marine Turtles in Australia* (Ref. 20).

In accordance with the requirements of the OPGGS(E)R, the demonstration that environmental impacts and risks associated with the aspect of operational subsea sound emissions being managed to an acceptable level will form part of the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan*, these types of considerations have been taken into account during the design and development phases of the J-IC Project.

1.5 Summary

The design and development of the J-IC Project has been undertaken in accordance with CAPL, Chevron Corporation, and Australian regulatory requirements. As described above, this has included identification of subsea sound emissions from the SCSt as a relevant risk during early stages of project development. Once identified as a risk, appropriate mitigation plans were established, and multiple analyses and studies have been undertaken to address data gaps and provide information to support detailed engineering design and impact assessments such that the design of the SCSt will allow for the operation of the SCSt to be in compliance with Chevron's OEMS and consistent with the requirements of the OPGGS Act and OPGGS(E)R. Based on detailed engineering design, any remaining residual uncertainty in predicted source or received levels will be addressed and managed within the revised *Gorgon and Jansz Feed Gas Pipeline and Wells Operations Environment Plan*.

1.6 Abbreviations and definitions

Acronym / Abbreviation	Definition
3D	Three dimensional
ABU	Australasia Business Unit

Acronym / Abbreviation	Definition
ALARP	As low as reasonably practicable
AUD	Australian dollar
BIA	Biologically important areas
BWI	Barrow Island
CAPL	Chevron Australia Pty Ltd
CDU	Central Distribution Unit
CMST	Centre for Marine Science and Technology
CPMS	Chevron Project Management System
Cth	Commonwealth
CTC	Chevron Technology Centre
ENVID	Environmental Impact Identification
EP	Environment Plan
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EPCM	Engineering, Procurement & Construction Management
EPS	Environmental Performance Standards
ERMP	Environmental Risk Management Process
ESD	Ecologically sustainable development
ESHIA	Environmental Social and Health Impact Assessment
FAT	Factory Acceptance Test
FCS	Field Control Station
FEED	Front end engineering design
FEM	Finite element model
FID	Final investment decision
GFRA	Gas-filled resonator array
GFP	Gorgon Foundation Project
H1	First half of the year
H2	Second half of the year
HAZID	HAZard IDentification
HSE	Health, Safety and Environment
HVSC	High Voltage Submarine Cable
IHAZID	Integrated Hazard Identification
IID	Initial Investment Decision
J-IC	Jansz–Io Compression
m	Metre
MPTS	Mid-line Pipeline Termination Structure
MSF	Module Support Frame
MV	Medium voltage
NOAA	National Oceanic and Atmospheric Administration

Acronym / Abbreviation	Definition
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
OE	Operational Excellence
OEMS	Operational Excellence Management System
OPGGS Act	*Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth)
OPPGS(E)R	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth)
PDRA	Pipe duct resonator array
PTS	Permanent threshold shift
SCMS	Subsea Compression Manifold Station
SCSt	Subsea Compression Station
SEL	Sound exposure levels
SPL	Sound pressure level
TTS	Temporary threshold shift
UK	United Kingdom
US	United States

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