CARNARVON HIBISCUS PTY LTD

VIC/RL17
WEST SEAHORSE-3/WARDIE-1 WELLS
NON-PRODUCTION OPERATIONS
ENVIRONMENT PLAN (EP)

DOC NO: CHPL-WSH3-HSEQ-PLN-001

Rev	Issue Date	Reason for Issue	Originator	Reviewer	Approver
9	05	RESUBMITTAL BASED ON NOPSEMA REQUEST	L. MUIR	K.ROBINSON	K. ROBINSON
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4	19/12/2022	ADDRESS NOPSEMA RFFWI AND RE-ISSUE FOR ASSESSMENT	B. GIRDWOOD	K. ROBINSON	K. ROBINSON
3	30/08/2022	RENEWED COMMUNITY CONSULTATION	B. GIRDWOOD	M. PATON	M. PATON
2	30/06/2022	ADDITION OF WARDIE-1 WELLHEAD	B. GIRDWOOD	M.PATON	M.PATON
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Submitted by Carnarvon Hibiscus Pty Ltd as the titleholder and operator of the VIC/RL17 Production Licence.

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ABBREVIATIONS

Abbreviation	Definition
3D Oil	3D Oil Limited
ABS	Australian Bureau of Statistics
AEP	Australian Energy Producers (formerly APPEA)
AFMA	Australian Fisheries Management Authority
AFZ	Australian Fishing Zone
AHD	Australian Height Datum
AHO	Australian Hydrographic Office
ALARP	As Low As Reasonably Practicable
AMSA	Australian Maritime Safety Authority
AMP	Australian Marine Parks
API	American Petroleum Institute
APPEA	Australian Petroleum Production & Exploration Association
ASBTIA	Australian Southern Bluefin Tuna Industry Association
ATBA	Area to be Avoided
BIAs	Biologically Important Areas
BoM	Bureau of Meteorology
BPEM	Best Practice Environmental Management
CAMBA	Agreement between the Government and Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment 1986
CER	Irish Commission for Energy Regulation
CFA	Commonwealth Fisheries Association
CHPL	Carnarvon Hibiscus Pty Limited
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973
CMP	Crisis Management Plan
CMT	Crisis Management Team
CoEP	Code of Environmental Practice
CTS	Commonwealth Trawl Sector
DAWE	Department of Agriculture, Water and the Environment
DCCEEW	Department of Climate Change, Energy, the Environment & Water
DJPR	Department of Jobs, Precincts & Regions
DoD	Department of Defence
DIRD	Department of Infrastructure and Regional Development
EAC	East Australian Current
EARPL	Esso Australia Resources Pty Ltd

Abbreviation	Definition
ESD	Ecologically Sustainable Development
EIA	Environmental Impact Assessment
EMBA	Environment that May be Affected
EMT	Emergency Management Team
EMW	Equivalent Mud Weight
EP	Environment Plan
E&P Forum	Oil Industry International Exploration and Production Forum
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPO	Environmental Performance Outcomes
EPS	Environmental Performance Standards
ERA	Environmental Risk Assessment
FFG	Flora and Fauna Guarantee
FIT	Formation Integrity Test
HAZID	Hazard Identification
HCTS	Habitat critical to the survival
HPB	Hibiscus Petroleum Berhad
HSE	Health Safety and Environment
HSSE	Health, Safety, Security, Environment and Quality Management
HSEMS	Health, Safety and Environment Management System
IAP2	International Association for Public Participation
IOGP	International Association of Oil & Gas Producers
IPIECA	International Petroleum Industry Environmental Conservation Association
IMS	Integrated Management system
IMT	Incident Management Team
IRT	Incident Response Team
JAMBA	Agreement between the Government and Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment 1974
JSEA	Job Safety and Environment Analysis
JSEA	Job Safety and Environment Analysis
KEF	Key Ecological Features
MAE	Major Accident Events
MD	Measured depth
MEE	Major Environment Events
mMDRT	Metres Measured Depth Below Rotary Table
MNES	Matters of National Environmental Significance
MNP	Ninety Mile Beach Marine National Park
MOC	Management of Change

Abbreviation	Definition
MODU	Mobile Offshore Drilling Unit
MSL	Mean Sea Level
MSS	Management System Standards
MSV	Maritime Safety Victoria
MyOSH	Incident Management System
NNTT	National Native Title Tribunal
NOPSEMA	National Offshore Petroleum Safety Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Authority
OPEP	Oil Pollution Emergency Plan
OPGGS(E)	Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
OPGGS Act	Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth)
OSMP	Oil Spill Monitoring Plan
OSRA	Oil Spill Response Atlas
P&A	Plug and Abandon
PA	Permanent Abandonment/Permanently Abandon
PMST	Protected Matters Search Tool
PPE	Personal Protective Equipment
PSZ	Petroleum Safety Zone
PVT	Pressure, volume and temperature
RAMSAR	Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971
ROKAMBA	Republic of Korea Migratory Birds Agreement 2006
ROS	Regional Outfall Sewer
ROV	Remotely Operated Vehicle
SESS	Southern and Eastern Scalefish and Shark
SETFIA	South-East Trawl Fishing Industry Association
SIV	Seafood Industry Victoria
SG	Specific Gravity
SHS	Scalefish Hook Sector
SSIA	Southern Shark Industry Alliance
SSFA	Sustainable Shark Fishing Association
SPFIA	Small Pelagic Fishery Industry Association
TA	Temporary Abandonment/Temporarily Abandon
TACC	Total Allowable Commercial Catch
TECs	Threatened Ecological Communities
TOC	Top of Cement
TVD	True Vertical Depth

Abbreviation	Definition
UNEP IE	United Nations Environment Programme Industry and Environment
VADA	Victorian Abalone Divers Association
VFA	Victorian Fisheries Authority
VRLA	Victorian Rock Lobster Association
VSFA	Victorian Scallop Fisherman's Association
WEMS	Well Engineering Minimum Standards
WOMP	Well Operations Management Plan
WSH-3	West Seahorse-3

UNITS OF MEASUREMENT

Abbreviation	Measurement
'	Foot/Feet
"	Inch(es)
°C	Degrees Celsius
bbl	Barrel
dB	Decibel(s)
g	Gram/s
ha	Hectare/s
hr	Hour/s
kJ	Kilojoule(s)
km	Kilometre
km/hr	Kilometres per hour
kPa	Kilopascal(s)
L	Litre(s)
m	Metre(s)
m^2	Square metres
m^3	Cubic metres
mL	Millilitre(s)
MM	Million
MMbbl	Million barrels
MMscf	Million Standard Cubic Feet
nm	Nautical Mile(s)
scf	Standard Cubic Foot/Feet
t	Tonne(s)
µg	Microgram(s)

1 INTRODUCTION

1.1 BACKGROUND

The West Seahorse-3 (WSH-3) and Wardie-1 wells were originally drilled by 3D Oil Limited (3D Oil) in early 2008 in the Exploration Permit Vic/P57 (now VIC/RL1). The wells are in Commonwealth waters in eastern Bass Strait approximately 13 km off the Gippsland coast (Figure 1-1).

The objectives of the WSH-3 well were to appraise and develop the hydrocarbon bearing target sandstones of the Latrobe Group in the West Seahorse field, originally discovered by drilling the West Seahorse-1 well in 1981. The deviated well intersected the primary sandstone at 1,561 metres below the rotary table (mRT) close to the prognosed depth and confirmed the presence of an oil column down to 1,570 mRT in a high-quality reservoir. Oil is also interpreted within an overlying interbedded interval of sandstones, coals and siltstones from 1,552 mRT to 1,561 mRT. Deeper targets were intersected deep to prognosis and below the oil-water contacts.

Following completion of the well, WSH-3 was successfully temporarily abandoned (suspended) as a potential future development well for the field in early May 2008 in accordance with international standards for well integrity (NORSOK, 2013).

Wardie-1 was a deviated exploration well drilled immediately following WSH-3 from an adjacent slot and the wells are approximately 2.8 m apart. The main objectives were the Eocene sandstones intersected in the West Seahorse oil field. Results indicated that the Wardie structure, although valid and oil-bearing, were smaller than mapped pre-drilling and the potential recoverable oil volume was not considered significant enough to justify suspension of the well. Wardie-1 was successfully plugged and abandoned in May 2008 in accordance with international standards for well integrity (NORSOK, 2013).

After successfully cutting and removing the 13 3/8” casing and wellhead three attempts were made to cut the 30” conductor but despite positive indications of a cut the conductor could not be pulled free. Subsequently the 30” landing string was backed out at the Quik-Jay connector and released casing pulled to surface and laid out. The 30” conductor remains in-situ approximately 2 m above the seabed. At that time the operator (3D Oil) indicated its intention to the Department of Primary Industries to remove the Wardie-1 conductor during subsequently proposed field development operations on WSH-3, and cited that given its location, Wardie-1 was incorporated into the associated Safety Zone for WSH-3.

Carnarvon Hibiscus Pty Ltd (CHPL) acquired the tenement in December 2012 and since then, there have been no further works on WSH-3 or Wardie-1. The WSH-3 well remains temporarily abandoned with the wellhead in place and the Wardie-1 conductor remains approximately 2.8 m from WSH-3 and 2 m above the seabed.

Retention Lease VIC/RL17 was granted in November 2021 over the former production license area VIC/L31. It is now intended that the WSH-3 wellhead will be removed, with operations intended to take place early 2025, but may occur in 2026 depending on vessel availability. Removal of the Wardie-1 conductor stub will be undertaken at the same time. All operations will be undertaken from a suitable vessel which is yet to be contracted.

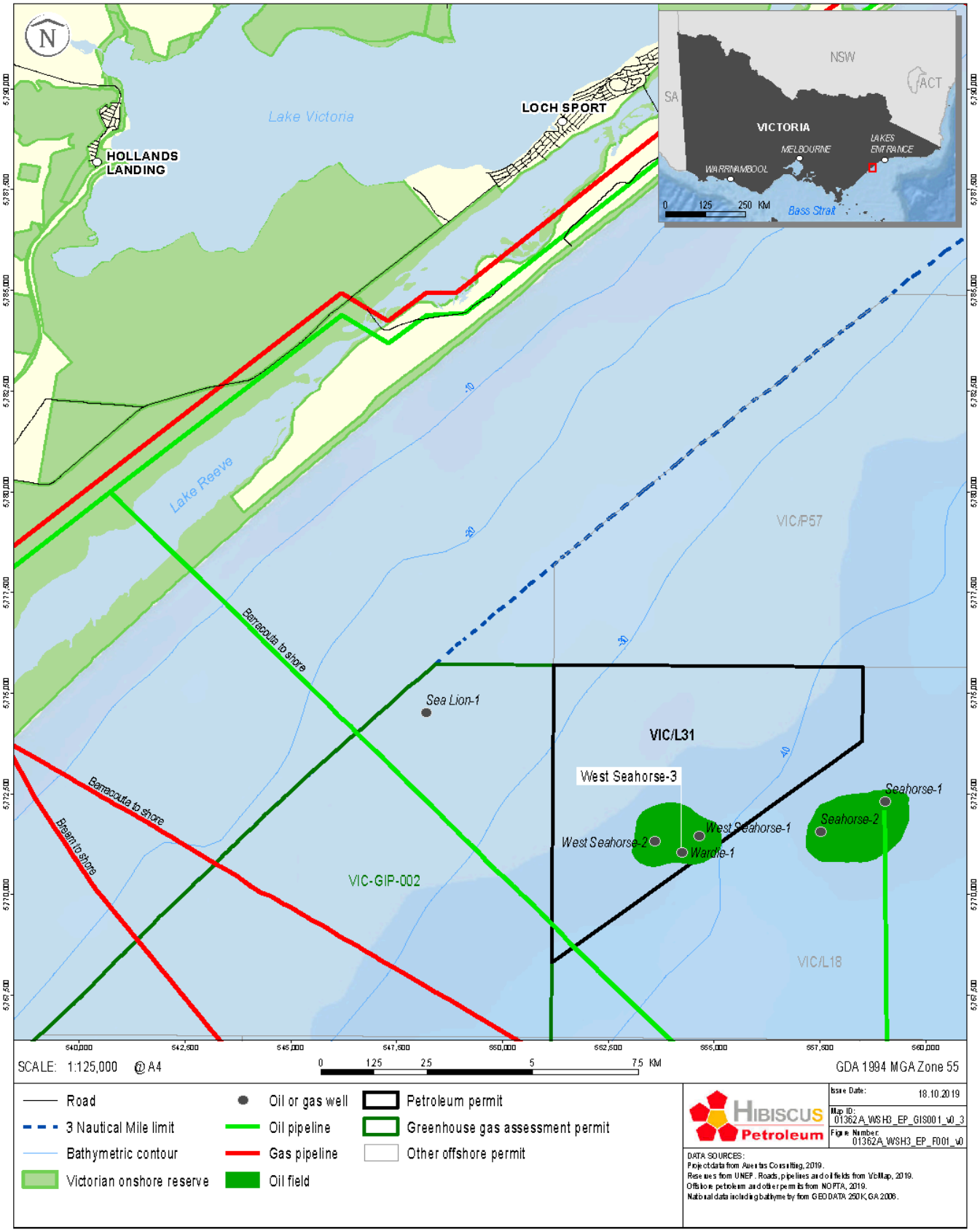


Figure 1.1: Location of VIC/L31 (now VIC/RL17) and the WSH-3 and Wardie-1 wells

1.2 THE TITLEHOLDER

Hibiscus Petroleum Berhad (HPB) is Malaysia's first listed independent oil and gas exploration and production company. Its key activities are focused on monetising producing oilfields and growing their portfolio of development and production assets. HPB is headquartered in Kuala Lumpur, and shares are listed on the Main Market of Bursa Malaysia Securities Berhad (Bursa Securities).

CHPL, a wholly owned subsidiary of HPB, acquired the VIC/P57 permit in December 2012 and successfully applied for a Production Licence (VIC/L31) over a portion of the block holding the West Seahorse Field, which was granted by the National Offshore Petroleum Titles Authority (NOPTA) in December 2013. At this time, 3D Oil was the joint titleholder with CHPL until September 2014 when CHPL purchased 3D Oil's share in the permit.

Subsequently CHPL successfully applied for a Retention Lease (VIC/RL17) which was granted in November 2021. Hibiscus Petroleum through its subsidiary CHPL, currently holds 100 percent of the VIC/RL17 Retention Lease and is the titleholder and Operator.

In accordance with Regulations 23(1)(2) of the Environmental Regulations, details of the titleholder and liaison person for this EP are listed below. In accordance with Regulation 23(3) of the Environmental Regulations CHPL will notify NOPSEMA of any change in the titleholder, a change in the nominated liaison, or changes to their contact details as soon as practicable after such a change takes place.

The titleholder for this activity is:

Carnarvon Hibiscus Petroleum Ltd
ACN: 157 689 426
2nd Floor, Syed Kechik Foundation Building, Jalan Kapas,
Bangsar, 59100 Kuala Lumpur, Malaysia
Phone: +603 2028 1025
Email: ken@hibiscuspetroleum.com

The nominated liaison person for this EP is:

Kevin Robinson
VP Project Assurance, Carnarvon Hibiscus Pty Ltd
2nd Floor, Syed Kechik Foundation Building, Jalan Kapas,
Bangsar, 59100 Kuala Lumpur, Malaysia
Phone: +603 2028 1025
Email: kevin.robinson@hibiscuspetroleum.com

1.3 PURPOSE

The primary purpose of this Environment Plan (EP) is to provide an Environmental Impact Assessment (EIA) and Environmental Risk Assessment (ERA) of the proposed wellhead removal activities for WSH-3 and removal of the Wardie-1 conductor which remains approximately 2.8m from WSH-3, 2m above the seabed and within the associated Safety Zone for WSH-3.

The EP also intends to serve as the final permissioning document for subsequent surrender of VIC/RL17.

1.4 SCOPE OF THIS PLAN

The activity (as defined in Section 2.1) is conducted in accordance with all applicable legislation and regulations, and specifically to meet the requirements of the *Offshore Petroleum and Greenhouse Gas Storage Act* 2006 (Cth) (OPGGS Act) and its associated Regulations.

This EP is prepared in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (OPGGS(E)R). It is submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment and acceptance.

This EP also provides an assessment against Section 270 of the OPGGS Act to support title surrender.

1.5 INTERFACES WITH OTHER DOCUMENTS

As a non-operational asset, the key interface with this EP is the WSH-3 Well Operations Management Plan (WOMP) (WSH-CHP-10-RG-RP-0002, Rev 6). Reference is also made to the West Seahorse Decommissioning Campaign (VIC/RL17) Oil Pollution Emergency Plan (Gippsland Basin) (WSH-CHP-60-RG-RA-0002, Rev 1).

1.6 ENVIRONMENT PLAN SUMMARY

Table 1-1 provides a summary of this EP as required by Regulation 35(7) of the OPGGS(E).

Table 1-1. EP Summary of material requirements

EP Summary Requirement	EP Section
The location of the activity	Section 2.2
A description of the receiving environment	Section 5
A description of the activity	Section 2
Details of the environmental impacts and risks	Section 7
The control measures for the activity	Section 7
The arrangements for ongoing monitoring of the titleholder's environmental performance	Section 8
Response arrangements in the oil pollution emergency plan (OPEP)	Refer to OPEP
Consultation already undertaken and plans for ongoing consultation	Section 4
Details of the titleholder's nominated liaison person for the activity	Section 1.2

2 ACTIVITY DESCRIPTION

This section provides a description of the activity in accordance with the requirements of Regulation 21(1) of the OPGGS(E).

2.1 THE ACTIVITY

In accordance with Regulation 5 of the OPGGS(E), this EP applies to a defined 'petroleum activity.' For the purposes of this EP, the petroleum activity is defined as:

'Decommissioning of temporarily abandoned (TA) (suspended) wellhead on the seabed'.

Given the Wardie-1 well was fully plugged and abandoned, and the conductor has been cut (at least in part) there are no petroleum activities associated with the well other than retrieval of the conductor pipe in conjunction with decommissioning activities on WSH-3.

2.2 ACTIVITY LOCATION

The WSH-3 wellhead is located in eastern Bass Strait approximately 13 km off the Gippsland coast in a water depth of 39.5 m (see Figure 1-1). The well coordinates are:

Latitude: 38° 12' 24.9422" S (5,771,044.135 N)
Longitude: 147° 37' 09.8649" E (554,229.358 E).

The Wardie-1 conductor lies 2.8m from WSH-3, the well coordinates are:

Latitude: 38° 12' 24.881" S (5,771,046.028 N)
Longitude: 147° 37' 09.793" E (554,227.625 E).

Table 2-1 lists the well's position in the context of other notable locations in the region.

Table 2-1 Distance from WSH-3 / Wardie-1 to key regional features

Feature	Distance and direction from WSH-3 to the nearest point of the feature
Nearest landfall	13 km northwest
Towns	
Loch Sport	16 km northwest
Paradise Beach	17.5 km west
Golden Beach	19 km west
Honeysuckles	39 km southwest
Seaspray	42 km southwest
Longford	47 km west-northwest
Lakes Entrance	49 km northeast
Sale	50 km northwest
Petroleum infrastructure	
Seahorse subsea wells (nearest) (oil)	3 km east

Feature	Distance and direction from WSH-3 to the nearest point of the feature
Seahorse to Barracouta A pipeline (oil)	4 km east
Barracouta to shore pipeline: Vic/PL1 & Vic/PL4(V) (oil & condensate)	6 km southwest
Bream to shore pipeline: Vic/PL32 & Vic/PL32(V)	10 km southwest
Tarwhine to Barracouta A pipeline (oil)	10 km south-southeast
Barracouta platform (oil & gas)	11 km south-southeast
Tarwhine subsea well (oil)	20 km south-southwest
Bream A platform (oil and gas)	35 km south-southeast
Dolphin to shore pipeline (oil)	37 km southwest
Dolphin monopod (oil)	37 km south-southwest
Tasmanian gas pipeline	40 km west-southwest
Non-petroleum infrastructure	
Regional Outfall Sewer (ROS) (Delray Beach)	23 km west-southwest
Saline Wastewater Outfall Pipeline (SWOP) (McGaurans Beach)	55 km southwest
Basslink electricity interconnector cable	60 km southeast
Australian Marine Parks	
Beagle	109 km south-southwest
Victorian marine parks	
Ninety Mile Beach Marine National Park	42 km southwest

2.3 OPERATIONAL AREA

The WSH-3 Operational Area during decommissioning activities is defined as:

The WSH-3 Petroleum Safety Zone (PSZ), which covers a 300 m-radius area around the WSH-3 wellhead.

This 300m radius around the well equates to an area of 28.3 ha (0.283 km^2). The Wardie-1 conductor lies within the WSH-3 Petroleum Safety Zone. The extent of the PSZ can be reasonably used to define the Operational Area during decommissioning operations. As they are both abandoned there are no credible hydrocarbon spill scenarios from the wells.

2.4 TIMING

The decommissioning activity is proposed for Q1 2025, over a period of approximately 7 days including mobilization, seabed surveys, wellhead removal and demobilization. It is expected that one day will be required to remove the WSH-3 wellhead and one day for the Wardie-1 conductor; however some contingency has been allowed for, if weather delays the activity, the activity may take approximately 14 days. To allow for weather windows, flexibility in vessel and equipment availability, this EP remains valid for the duration of 2025 and 2026 (2-year validity).

2.5 WELLS OVERVIEW

2.5.1 WSH-3

The WSH-3 well was drilled with KCL Polymer Mud (9.5 – 10.00 ppg), a water-based mud (WBM) as detailed in the WOMP, WSH-CHP-10-RG-RP-0002. The casing design for WSH-3 is described below. Following completion of its appraisal activities, WSH-3 was successfully plugged and TA in early May 2008. The TA cement plug design features four plugs as illustrated in Figure 2-1. The WSH-3 TA well was TA in accordance with D-010 Well Integrity in Drilling and Well Operations (NORSOK, 2013) and HPB Standards for Well Integrity (AUS-HPB-60-MN-1004).

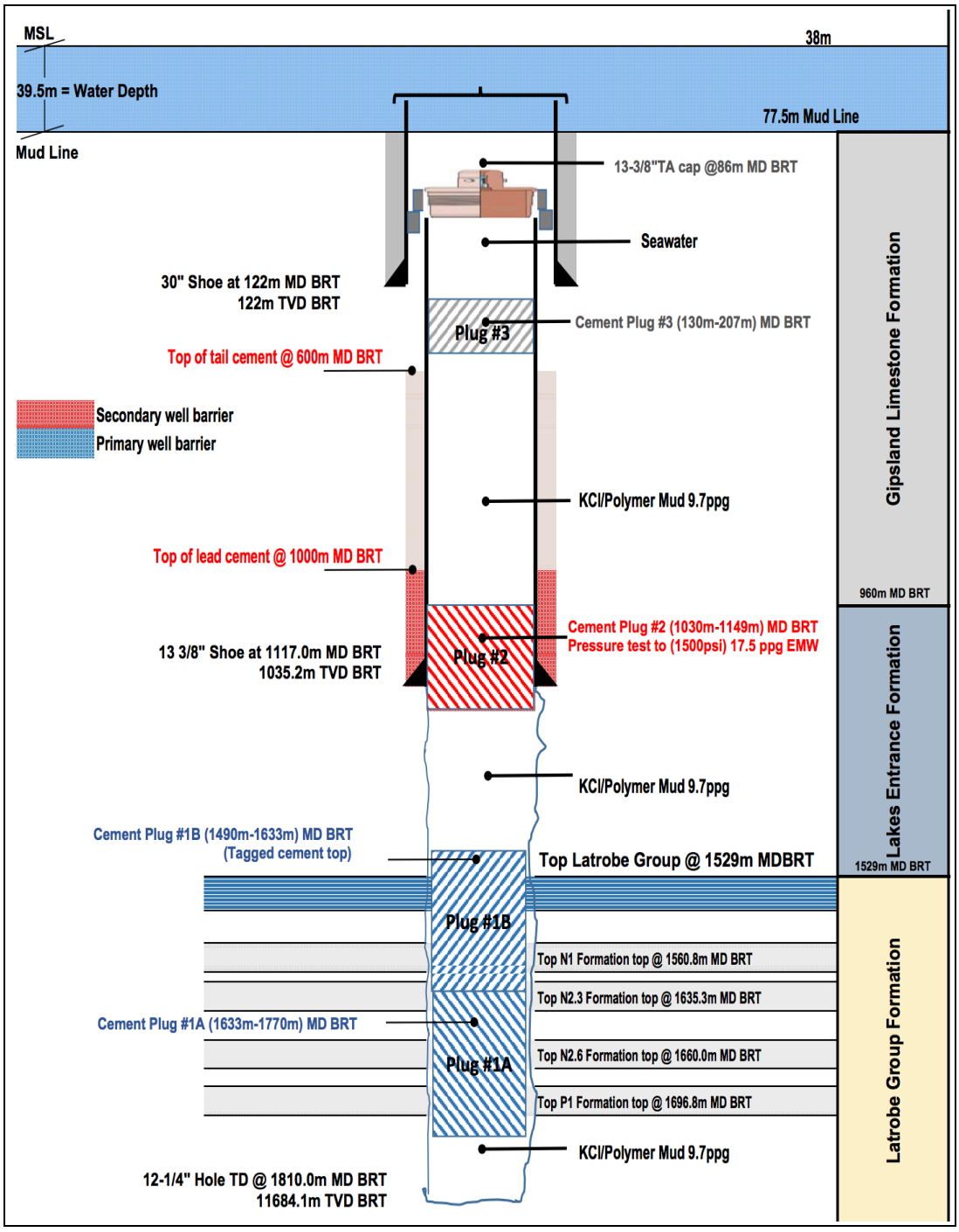


Figure 2.1: WSH-3 TA plugs

A debris cap was installed on top of the 762 mm (30”) Quick-Jay box connector in the wellhead system. The 30” conductor with the debris cap protrudes 2 m above the seabed and measures approximately 1.1 m in diameter (Figure 2-2).

The debris cap is constructed of steel and sits on top of the subsea wellhead and is designed to protect the wellhead from corrosion, marine growth and damage from third-party activities, such as trawl fishing.

Since the debris cap was installed in 2008, there have been no reports of intentional or unintentional interference with the structure.

Corrosion inhibitor was injected under the debris cap to protect the wellhead seal surfaces to allow for future well intervention. Due to the length of time since injection, it is highly unlikely that any corrosion inhibitor remains, however a worst-case assumption would be the full volume remaining in the cap which is likely to be less than $2m^3$ due to the volume of the space.

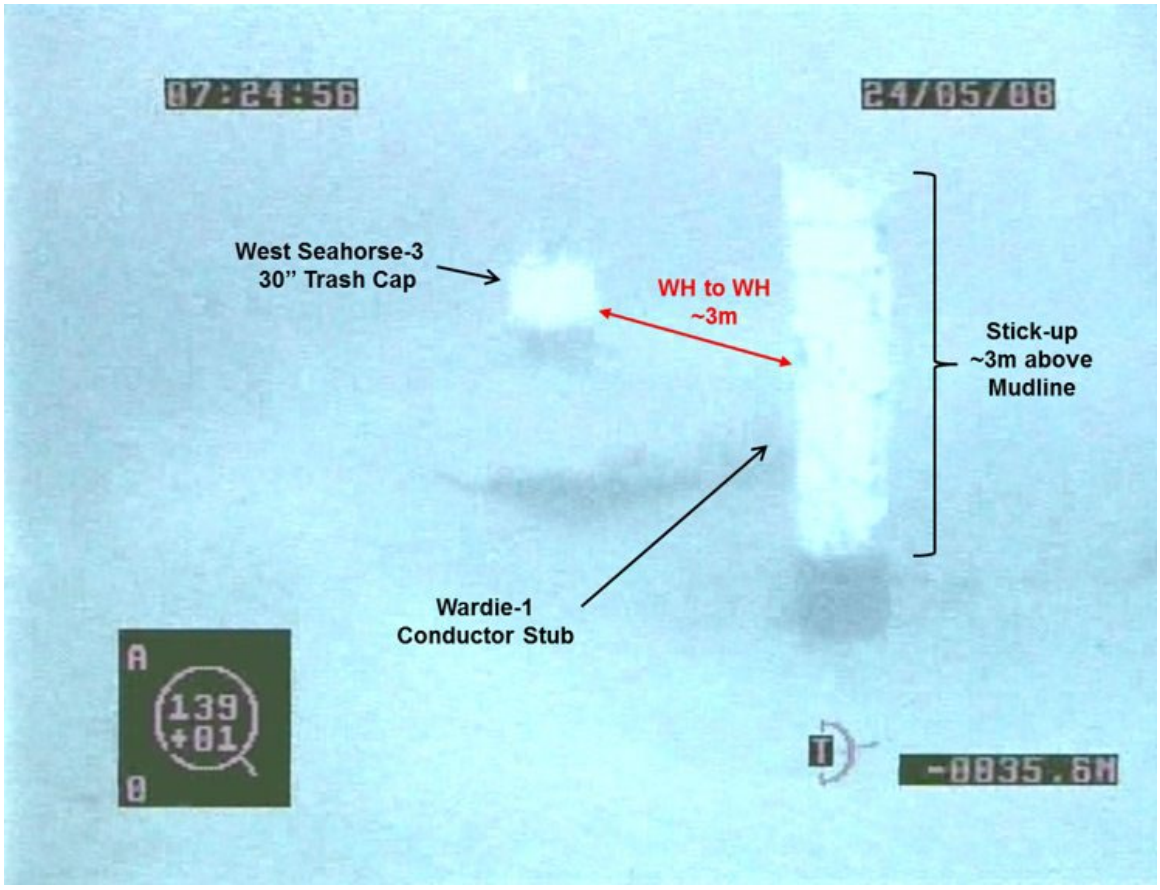


Figure 2.2: Still image from ROV footage of the WSH-3 Conductor and Debris Cap and Wardie-1 Conductor in 2008

2.5.2 WARDIE-1

The Wardie-1 well was drilled with the same mud system as WSH-3, a KCL Polymer Mud (9.5 – 10.00 ppg), a water-based mud (WBM) (as detailed in the WOMP, WSH-CHP-10-RG-RP-0002). The casing design for Wardie-1 is described below. Following completion of its appraisal activities, Wardie-1 was plugged and abandoned in May 2008 in accordance with D-010 Well Integrity in Drilling and Well Operations (NORSOK, 2013) and HPB Standards for Well Integrity (AUS-HPB-60-MN-1004). The permanent abandonment cement plug design features four plugs. The conductor has been partially cut and remains in-situ. As the Wardie -1 well was permanently abandoned and the 340 mm (13⅜") casing and wellhead removed no abandonment cap has been installed as there is no need to protect the conductor from corrosion, marine growth and damage from third-party activities, such as trawl fishing.

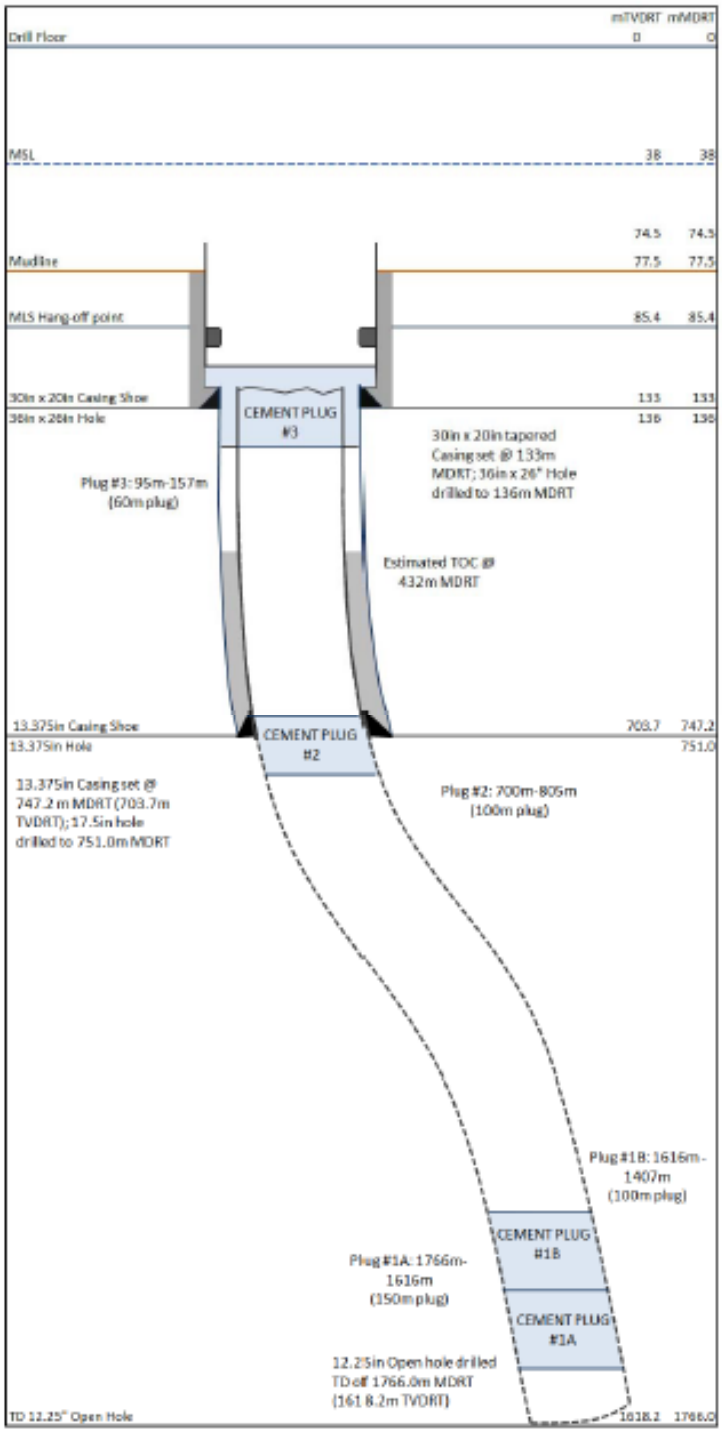


Figure 2.3: Wardie 1 Final Well Schematic

2.5.3 WELL RISK REVIEW

A risk review conducted as part of the WOMP concluded that the risk of hydrocarbon fluids release from the TA WSH-3 is no different to a permanently abandoned well. Therefore, it was concluded that risks to well integrity and to the receiving environment from leaking hydrocarbons is ALARP. Wardie-1 is a permanently abandoned well and as such the risks to well integrity and to the receiving environment from leaking hydrocarbons is nil.

In the case of the West Seahorse temporarily abandoned well, there are no maintainable items of equipment. The installed cement plugs were verified initially, with no further requirements for monitoring. During the current WOMP Revision (Rev 6, under assessment with NOPSEMA) consideration is given to decommissioning of the well. As per the initial risk assessment the risk of hydrocarbon fluid release from the well during any such inspection was again considered as no different to a permanently abandoned well. The requirement for a surface cement plug was reviewed in 2023, during the preparation of the West Seahorse-3 & Wardie-1 Well Decommissioning Basis of Design (WSH-XCD-60-EN-BD-0010). This review, coupled with the Well Decommissioning classification matrix, found that there was no requirement to install an environmental barrier ("environmental plug") in this case and the well would only require wellhead severance to meet the criteria for permanent abandonment.

For this reason, VIC/RL17 Oil Pollution Emergency Plan (OPEP) for West Seahorse Decommissioning does not consider hydrocarbon releases from the wells. The OPEP and this EP does however assess the risks, impacts, and control measures of activities associated with the proposed vessel-based decommissioning activities of wellhead and infrastructure removal.

2.6 ROV ACTIVITIES

Revision 3 of the WSH-3 WOMP (Feb 2022) proposed a period of non-activity whilst continuing to explore opportunities to complete the well as a producer, and consideration was given to conducting an ROV inspection of the wellhead and adjacent conductor stub. With the decision now made to fully decommission the well and inspection will be undertaken as part of the decommissioning operations. The possibility of marine growth or fouling of the wellhead by marine debris could impact re-entry of the well for wellhead removal and as such a visual inspection of the wellhead is warranted.

CHPL proposes that a ROV inspection of the WSH-3 wellhead and the surrounding seabed will be undertaken as the first stage of operations. This will include observation of the Wardie-1 conductor and will be a simple 'flyover' visual inspection. Survey techniques and purpose are further described below.

2.6.1 PRE-ACTIVITY ROV SURVEY

An ROV will be deployed to locate and inspect the wellhead and conductor and will be mobilised as part of the equipment spread on board the activity vessel.

Given the shallow depth it is anticipated that the wellhead and conductor will be able to be located using the sonar on the ROV and no MBES, SBP or SSS type equipment will be required. The location of the infrastructure has been confirmed in previous surveys.

Once located a General Video Inspection (GVI) will be conducted using the ROV to record imagery of the WSH-3 wellhead, the Wardie-1 conductor, and the surrounds. Previous footage indicates the visibility will be adequate for imagery. This survey will also confirm no unexploded ordnances (UXO) are present in close proximity.

2.6.2 WELLHEAD AND AREA PREPARATION

It is unclear if there is a cement patio surrounding the wellhead or conductor, and therefore a small probe on the ROV may be used to prod the seabed in the immediate area around the infrastructure. Further breakup of the cement patio is likely not required as the activity of cutting and pulling the infrastructure will usually break the patio up or it will be recovered with the wellhead. The presence of a patio is not considered to be a hindrance to recovery of the infrastructure.

Marine growth on the infrastructure does not appear to be significant, and no cleaning is required prior to undertaking infrastructure removal, as marine growth removal will take place onshore as required. If there is debris on the wellhead (e.g. fishing net), this may need to be recovered prior to commencing removal.

The trash cap will be removed from the WSH-3 well and recovered to the vessel.

2.6.3 POST-ACTIVITY ROV SURVEY

Following removal of infrastructure and recovery to the vessel, a final as-left survey will be conducted to provide visual confirmation of infrastructure removal. This will include a survey of approximately 70m radius from the wellhead to recover any oilfield debris that is identified.

2.7 VESSEL OPERATIONS

One vessel is required to complete this activity with the capacity to recover the subsea infrastructure to deck. A utility vessel such as the Skandi Darwin (or similar) will be utilised for the activity. Such vessels are expected to be approximately 90m in length and host a maximum POB of 60 persons. The vessel will be fuelled by marine diesel fuel and no refuelling is planned in the operational area; all fuelling will be conducted at the point of mobilisation. The vessel will be operated with dynamic positioning (DP) whilst on location to ensure accurate positioning for the wellhead removal activity.

The short duration of the activity means a specific weather window can be chosen to enhance the safety of the vessel. This includes periods of high visibility and calm sea conditions. The engagement of professional and competent crew can further reduce the requirement for excess fuel on board to combat any contingencies, minimise risk of any collisions, and ensure any activities under the vessel SOPEP and fully understood and able to be actioned.

The vessel transiting to and from the operational area falls under the Commonwealth Navigation Act 2012 and is subject to existing Australian Maritime Law.

Helicopters are not planned for use during this short duration activity except in case of emergency.

2.8 DECOMMISSIONING ACTIVITIES

Plans to commercialise the WSH-3 discovery have changed and CHPL now intends to fully decommission the WSH-3 well, which involves removing the wellhead and severing the conductor below the sea floor via a vessel-based campaign.

The requirement to remove all structures that are not used in connection with operations under Section 572 of the OPGGS Act, means the following scenario will be progressed:

- CHPL will remove the trash cap and wellhead prior to relinquishing the licence. The cement plugs are compliant with permanent abandonment of the well and therefore only the wellhead and conductor to be removed from the seabed to complete the abandonment process. This would likely be done with an abrasive cutting system which has been previously used in Australia. Wellhead cutting equipment is deployed from a dynamically positioned vessel with ROV observation. The conductor and wellhead are severed around 2 metres below the mudline and recovered to the deck of the vessel and scrapped.

This intention has triggered the preparation and submission of this decommissioning EP to NOPSEMA for acceptance prior to any activities taking place.

Some alternatives were considered to the wellhead removal scenario outlined above. Leaving the wellhead in-situ was not considered to be a viable option because the wellhead must be removed to allow the licence to be relinquished. Wellhead capping was also not considered as it would not allow for the licence to be relinquished and would add more material to the receiving environment.

2.8.1 WELLHEAD REMOVAL ACTIVITY

The wellheads and conductor will be removed and recovered as part of the petroleum activity program. The methodology for their removal is described below; along with alternatives that were considered.

Alternative cutting tools were assessed, such as mechanical cutting tools; however, these have had mixed results compared to abrasive water jetting which has been selected to allow for potential environmental impacts and risks to be managed to ALARP. If full entry into the well with an internal cutting tool is not possible, first cut fails, tool fails or the conductor cannot be pulled, then there may need to be a cut further up (but still below mudline. The expectation is that the final cut will be 2-3m below the mudline.

There are no guide bases on the wellhead or conductor that need removal, no chemicals or flocculants are required for using the abrasive water jetting tool; only grit and water are utilised. If there is sediment that has infilled the wellhead or conductor, this can be removed through water jetting with the tool, to enable the water jetting tool to be inserted. Most of the grit and sediment goes into the well during cutting, though some turbidity and seabed disturbance is expected. Any swarf (metal cuttings) generated during cutting generally will fall into the well, but may also fall to the surrounding seabed.

Following removal of the infrastructure, it will be transported to the Australian mainland for recycling and disposal at a licensed facility. Marine growth cleaning and cutting of the infrastructure will be completed onshore.

Table 2-2: Methodologies for infrastructure removal

Method	Description	Feasibility
Abrasive Water Jet Cutting (AWJC)	Method uses a system of high-pressure water entrained with grit pumped via an umbilical from a vessel to a subsea cutting tool that is inserted into the inner well casing. Where possible, cut is made at sufficient depth below the mudline (>3 m) in accordance with International Well Standard practice, e.g. Oil and Gas UK Well Decommissioning Guidelines (OGUK 2018). This may also allow for additional cut attempts.	Feasible for the wellhead and conductor and is the chosen method. This method will likely use approximately 4t of grit per cut (majority or all to be released below the mudline).
External cutting using diamond wire saw (DWS) or equivalent	Method uses a hydraulically driven motor and pulley system to operate an industrial diamond cutting wire via a vessel or ROV. May require up to 1 m of well infrastructure to be left in situ above seabed due to external cut. The stump can only be shortened through dredging of the sediment around the wellhead and conductor prior to cutting to lower the cutting tool further down into the seabed. This is not feasible if a cement patio is present.	Although feasible for the infrastructure, it is not the selected option. These are typically selected for wells with guide bases and wide infrastructure. There is also the likelihood of leaving a stump in situ of approximately 300mm which is not the preference.
Mechanical internal cutting	Method uses mechanical cutting knives that are inserted into the inner well casing and rotated. Where possible, cut is made at sufficient depth below the mudline (>3 m) in accordance with international Well standard practice, e.g. Oil and Gas UK Well Decommissioning	There has been mixed success with this type of tool compared to the abrasive water jetting tool, therefore this tool type was not considered further.

Method	Description	Feasibility
	Guidelines (OGUK 2018). This may also allow for additional cut attempts.	
Explosive severance of wellhead	Involves the use of small explosive devices within wellhead to sever the wellhead for recovery.	Explosive severance of the wellhead was not considered due to the greater environmental impacts expected from this activity and the additional environmental approvals required.

2.8.2 ASSESSMENT AGAINST SECTION 270

To support title surrender Table 2.1 outlines the requirements of Section 270 (3) (c) - (f) of the OPGGS Act. Following the completion of activities under this EP, CHPL will perform an assessment of compliance against the requirements in Section 270(3).

Table 2-3 Section 270(3) Assessment

Criteria of the OPGGS Act		Assessment
Section 270(3) (a)	The Joint Authority may consent to the surrender sought by the application only if the registered holder of the permit, lease or licence: (a) has paid all fees and amounts payable by the holder under: (i) this Act; (ii) the Royalty Act; (iii) section 10E of the Regulatory Levies Act; or has made arrangements that are satisfactory to the Titles Administrator for the payment of those fees and amounts; and	Hibiscus will comply with requirements of 270(3) (a) in order to surrender title.
Section 270(3) (b)	(b) has complied with the conditions to which the permit, lease or licence is subject and with the provisions of: (i) this Chapter; and (ii) Chapter 4; and (iia) Chapter 5A; and (iii) Chapter 6; and (iv) Part 7.1; and (v) the regulations.	Hibiscus will comply with requirements of a270(3) (b) in order to surrender title.
Section 270(3) (c) (i) & (ii)	The registered holder of the permit, lease or licence has, (i) to the satisfaction of NOPSEMA, removed or caused to be removed from the surrender area all property brought into the surrender area by any person engaged or concerned in the operations authorised by the permit, lease or licence; (ii) or made arrangements that are satisfactory to NOPSEMA in relation to that property	This EP provides for the removal of infrastructure above the mudline. EPS-18 outlines a commitment to confirm removal of infrastructure with a post removal survey.
Section 270(3) (d)	The registered holder of the permit, lease or licence has, to the satisfaction of NOPSEMA, plugged or closed off all wells made in the surrender area by any person engaged or concerned in the operations authorised by the permit, lease or licence	The NOPSEMA accepted WOMP confirms (WSH-CHP-10-RG-RP-0002) all wells have been satisfactorily plugged and abandoned to the satisfaction of NOPSEMA, CHPL will comply with the accepted WOMP
Section 270(3) (e)	The registered holder of the permit, lease or licence has provided, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the surrender area	Activities that have occurred on VIC/RL 17 include the drilling of the wells and plugging and abandonment of the wells.

	Per **Section 270 Consent to surrender title – NOPSEMA Advice Policy** Natural resources are: "The natural resources referred to in this Part consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil"	Drilling of the two wells occurred in 2008 and utilised Water Based Mud (WBM). The use of WBM and the time since drilling reduces the risk of any residual impact to natural resources to negligible. The wells were never producing wells. Existing imagery confirms the absence of any cuttings piles or debris around the wellhead and conductor, and the seabed looks similar to that adjacent to the infrastructure. This EP outlines the potential impacts from the removal activities in Section 7 and 8. Assessment of the removal activity has shown there will be negligible impact from planned activities. There is not expected to be any ongoing impact to the natural resources in the surrender area following removal of the infrastructure.
Section 270(3) (f)	The registered holder of the permit, lease or licence has, to the satisfaction of NOPSEMA, made good any damage to the seabed or subsoil in the surrender area caused by any person engaged or concerned in the operations authorised by the permit, lease or licence	Activities that have occurred on VIC/RL 17 include the drilling of the wells and plugging and abandonment of the wells and the removal activity. Impacts to the seabed from these activities have or will be limited to the immediate vicinity of the well infrastructure, with negligible impacts that will recover over a short period of time (refer Section 7.6).

3 LEGISLATION AND GUIDELINES

In accordance with OPSSG(E) Regulation 21(4), this section describes the legislative requirements that apply to the activities described in this EP.

Table 3-1 presents a summary of the key Commonwealth legislation and regulations relevant to the environmental management of the activity.

3.1 LEGISLATIVE FRAMEWORK

The principal offshore legislation for production activities beyond three nautical miles to the outer extent of the Australian Exclusive Economic Zone at 200 nautical miles is the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act 2006. The OPGGS Act is administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

3.2 RELEVANT LEGISLATION

Key Commonwealth legislation that is applicable to the activity is summarised in Table 3-1.

The Australian Petroleum Production and Exploration Association (APPEA) Code of Environmental Practice 2008 provides guidance on a set of recommended minimum standards for petroleum industry activities offshore. These standards are aimed at minimising adverse impact on the environment, and ensuring public health and safety by using the best practical technologies available.

The Australian Petroleum Production and Exploration Association (APPEA) Code of Environmental Practice 2008 provides guidance on a set of recommended minimum standards for petroleum industry activities offshore. These standards are aimed at minimising adverse impact on the environment.

The Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000) are also relevant to the activity and provide water quality guidelines proposed to protect and manage the environmental values supported by the water resources.

3.3 FEDERAL COURT DECISIONS

On 21 September 2022, the Federal Court of Australia ruled in the *Tipakalippa vs NOPSEMA (No. 2) [2022] FCA 1121* case to set aside NOPSEMAs decision to accept an EP (the Santos Barossa Development Drilling and Completions EP) on the basis NOPSEMA could not be reasonably satisfied that the EP met the criteria specified in the OPGGS (Environment) Regulations. This ruling specifically related to the undertaking of relevant person consultation, as required by Regulation 25 of the OPGGS (Environment) Regulations. A subsequent appeal to this decision, *Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193,* was dismissed by the Federal Court on the 2 December 2022. From this date, the appeal decision represents the law regarding requirements for consultation in accordance with the OPGGS (Environment) Regulations. Following the Federal Court decisions, NOPSEMA has developed a guideline for industry *Consultation in the course of preparing an environment plan* (NOPSEMA, 2023). This guideline and the appeal decision have informed the preparation of this EP.

Table 3-1 Summary of key Commonwealth environmental legislation relevant to the activity

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
Biosecurity Act 2015 *Biosecurity Regulations 2016* *Biosecurity Amendment (Biofouling Management) Regulations 2021*	The Act and its supporting legislation are the primary legislative means for managing risk of pests and diseases entering into Australian territory and causing harm to animal, plant and human health, the environment and/or the economy. **Relevance to this activity:** The act and regulations set out vessel obligations for the management of biofouling when operation vessels under biosecurity control are within Australian territorial seas.	International Convention for the Control and Management of ship's Ballast Water and Sediments 2004	Department of Agriculture, Fisheries and Forestry (DAFF)
Climate Change Act 2022	The Act sets out Australia's greenhouse gas emissions reduction targets. It outlines Australia's greenhouse gas emissions reduction targets of a 43% reduction from 2005 levels by 2030 and net zero by 2050; requires the minister to prepare and table an annual climate change statement; requires the Climate Change Authority to give the minister advice in relation to the annual statement and future greenhouse gas emissions reduction targets; and provides for periodic reviews of the operation of the Act. The Act operates as 'umbrella' legislation to implement Australia's net-zero commitments and codifies	United Nations Framework Convention on Climate Change 1992 Kyoto Protocol 1997 and Doha Amendment 2012 Paris Agreement 2016	Department of Climate Change, Energy. Environment, and Water (DCCEEW)

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
	Australia's net 2030 and 2050 GHG emissions reductions targets under the Paris Agreement. **Relevance to this activity:** The Act itself does not impose obligations directly on companies, but its passage into law sets the scene for sector-based reforms to implement the 2030 target and emissions budget, which will impact businesses. The Safeguard Mechanism reforms, which will apply principally to the industrial and resources sectors, is one such measure.		
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) *(& Regulations 2000)*	Protects matters of national environmental significance (MNES), provides for Commonwealth environmental assessment and approval processes and provides an integrated system for biodiversity conservation and management of protected areas. The nine MNES are: • World heritage properties; • National heritage places; • Wetlands of international importance (Ramsar wetlands); • Nationally threatened species and ecological communities; • Migratory species; • Commonwealth marine environment; • The Great Barrier Reef Marine Park;	Convention on Biological Diversity and Agenda 21 1992. Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973 (CITES). Agreement between the Government and Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment 1974 (JAMBA). Agreement between the Government and Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment 1986 (CAMBA). Republic of Korea Migratory Birds Agreement 2006 (ROKAMBA). Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (RAMSAR).	Department of Climate Change, Energy. Environment, and Water (DCCEEW) (NOPSEMA in the case of this activity)

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
	Nuclear actions (including uranium mining); and A water resource, in relation to coal seam gas development and large coal mining development. **Relevance to this activity:** This EP includes a description and assessment of MNES that may be impacted by the activity. Part 8 of the EPBC Regulations 2000 outlines requirements for the vessel when interacting with cetaceans.	International Convention for the Regulation of Whaling 1946. Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979. Convention concerning the Protection of the World Cultural and National Heritage 1972.	
Marine Orders Part 91 – Marine Pollution Prevention — Oil	Marine Orders Part 91 implements Part II of the POPS Act, Chapter 4 of the Navigation Act 2012, and Annex I of MARPOL 73/78 (oil pollution). The Marine Orders provide standards for the discharge of certain oily mixtures or oily residues and associated equipment and include duties to manage bunkering and transfers of oil between vessels; to maintain Oil Record Books and Shipboard Oil Pollution Emergency Plans (SOPEPs); and to report oil pollution. **Relevance to this activity:** Vessels ≥400 gross tonnes (GT) are required to maintain: International Oil Pollution Prevention (IOPP) certificates to demonstrate that the vessel and onboard equipment comply with the requirements of Annex I of MARPOL 73/78 (as applicable to vessel size, type and class)	International Convention for the Prevention of Pollution from Ships (MARPOL) 1983	Department of Infrastructure, Transport, Regional Development, Communications and the Arts

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
	Oil Record Books to record activities, such as fuel/oil bunkering and discharges of oil, oily water, mixtures and residues. SOPEPs outlining the procedures to be followed during an oil pollution incident. Discharges must also comply with Annex I of MARPOL 73/78, and oil pollution incidents must also be reported to AMSA. The requirements will apply to vessels (as appropriate to their size, type and class) at all times.		
Marine Orders Part 93 – Marine pollution prevention — to noxious liquid substances; and Marine Orders Part 94 – Marine pollution prevention — packaged harmful substances	The requirements of Marine Orders Part 93 and Marine Orders Part 94 and the POPS Act relating to noxious liquid substances and packaged harmful substances do not apply to the activity on the basis that: the activity does not involve 'chemical tankers' or 'NLS tankers' that carry a cargo of noxious liquid substances in bulk, as defined by Annex II of MARPOL 73/78. Packaged harmful substances, as defined by Annex III of MARPOL 73/78, are not carried on board the vessel. **Relevance to this activity:** Not applicable.	International Convention for the Prevention of Pollution from Ships (MARPOL) 1983	Department of Infrastructure, Transport, Regional Development, Communications and the Arts
Marine Orders Part 95 – Marine pollution prevention — garbage	Marine Orders Part 95 – Marine pollution prevention — garbage implements Part IIIC of the POPS Act, Chapter 4 of the Navigation Act 2012, and Annex V of MARPOL 73/78 (garbage). The Marine Orders provide for the discharge of certain types of garbage at sea, waste storage, waste	International Convention for the Prevention of Pollution from Ships (MARPOL) 1983	Department of Infrastructure, Transport, Regional Development,

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
	incineration, and the comminution and discharge of food waste. They also set out requirements for garbage management and recording. **Relevance to this activity:** Vessels ≥100 GT, or vessels certified to carry 15 persons or more, are required to maintain a Garbage Management Plan. Vessels ≥400 GT are required to maintain a Garbage Record Book. The requirements will apply to the vessel (as appropriate to their size, type and class) at all times.		Communications and the Arts
Marine Orders Part 96 – Marine pollution prevention — sewage	Marine Orders Part 96 – Marine pollution prevention — sewage implements Part IIIB of the POPS Act, Chapter 4 of the Navigation Act 2012, and Annex IV of MARPOL 73/78 (sewage). The Marine Orders include requirements for the treatment, storage and discharge of sewage and associated sewage systems, and for an International Sewage Pollution Prevention (ISPP) certificate to be maintained on board. **Relevance to this activity:** Vessels ≥400 GT are required to maintain International Sewage Pollution Prevention (ISPP) certificates to demonstrate that vessels and their onboard sewage systems comply with the requirements of Annex IV of MARPOL 73/78.	International Convention for the Prevention of Pollution from Ships (MARPOL) 1983	Department of Infrastructure, Transport, Regional Development, Communications and the Arts

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
	Discharges of sewage must also comply with Annex I of MARPOL 73/78, and oil pollution incidents must also be reported to AMSA		
Marine Orders Part 97 – Marine pollution prevention — air pollution	Marine Orders Part 97 – Marine pollution prevention — air pollution implements Part IIID of the POPS Act, Chapter 4 of the Navigation Act 2012, and Annex VI of MARPOL 73/78 (air pollution). **Relevance to this activity:** The Marine Orders set requirements for marine diesel engines and associated emissions, waste incineration on board vessels, engine fuel quality, and equipment and systems containing ozone-depleting substances (ODS). This includes: • reducing emissions through use of low-sulphur fuel in accordance with Marine Order 97 • reducing the potential for emissions or particulates by ensuring only permissible waste is incinerated as per Marine Order 97. • vessels will maintain a current International Air Pollution Prevention Certificate that certifies that measures to prevent ozone-depleting substance emissions and to reduce NOx, SOx and incineration emissions during the activity are in place.	International Convention for the Prevention of Pollution from Ships (MARPOL) 1983	Department of Infrastructure, Transport, Regional Development, Communications and the Arts

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
Marine Order 98 (Harmful anti-fouling systems	This Marine Order prescribes matters for the Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 (AFS Act) and gives effect to survey requirements under the International Convention on the Control of Harmful Anti-fouling Systems on Ships (Convention). **Relevance to this activity:** Marine order 98 sets out the requirements for: • survey of anti-fouling systems installed on vessels • form of anti-fouling system certificates, endorsements and declarations • forms to be used to report incidents.	International Convention for the Prevention of Pollution from Ships (MARPOL) 1983	Department of Infrastructure, Transport, Regional Development, Communications and the Arts
OPGGS Act 2006 and OPGGS (Environment) Regulations 2023	The Act addresses all licensing and HSE issues for offshore petroleum activities extending beyond the 3 nm limit. The Regulations (Part 2) specify that an EP must be prepared for any petroleum activity and that activities are undertaken in an ecologically sustainable manner. Section 616 of the Act allows for the gazettal of a PSZ. **Relevance to this activity:** The preparation and acceptance of this EP satisfies the key requirements of this legislation. A PSZ is gazetted for WSH-3 and Wardie-1 under the Act (noting that the gazettal was done under the then Petroleum (Submerged Lands) Act 1967, which was repealed by the OPPGS Act).	Not applicable.	NOPSEMA

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
	Under subsection 572(3) of the OPGGS Act, a titleholder must remove from the title area all structures that are, and all equipment and other property that is neither used nor to be used in connection with the operations. Under subsection 270(3) of the OPGGS Act, before title surrender, all property brought into the surrender area must be removed to the satisfaction of NOPSEMA, or arrangements that are satisfactory to NOPSEMA must be made relating to the property. The titleholder must also make good any damage to the seabed or subsoil in the surrender area caused by any person engaged or concerned in the operations authorised by the permit, lease or licence (Section 270(3)(f) of the OPGGS Act). **Relevance to this activity:** The removal of the infrastructure from the title area satisfies this requirement to remove all property.		
Ozone Protection and Synthetic Greenhouse Gas Management Act 1989	Regulates the manufacture, importation and use of ozone depleting substances (typically used in fire-fighting equipment and refrigerants). Applicable to the handling of any ODS. **Relevance to this activity:** The activity does not include import, export or manufacture activities of ODS. This Act applies where ODS is found vessel refrigeration systems; however, this is a rare occurrence.	Protection of the Ozone Layer (The Vienna Convention) 1985 The Montreal Protocol 1987	Department of Climate Change, Energy. Environment, and Water (DCCEEW)

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
Ozone Protection and Synthetic Greenhouse Gas Management Reform (closing the Hole in the Ozone Layer) Act 2022	This act amends the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 in relation to the Ozone Protection and Synthetic Greenhouse Gas Program by: imposing controls that are currently imposed through licence conditions, such as the ban on import of bulk gas in non-refillable containers; clarifying licence and exemptions requirements; increasing the time allowed for submitting reports and payment levies; adopting the standard provisions of the Regulatory Powers (Standard Provisions) Act 2014, including certain minor modifications; updating the offence and civil penalty provisions; introducing information gathering powers including the ability to issue a notice to produce; providing the option of licence suspension as an alternative to immediate cancellation of financial penalties; providing for an internal review mechanism for reviewable decisions; and allowing the use or disclosure of certain information. **Relevance to this activity:** The activity does not include import, export or manufacture activities of ODS. This Act applies where ODS is found on vessel refrigeration systems; however, this is a rare occurrence.	Protection of the Ozone Layer (The Vienna Convention) 1985 The Montreal Protocol 1987	Department of Climate Change, Energy. Environment, and Water (DCCEEW)

Legislation/Regulation	Scope	Related International Conventions	Administering Authority
Native Title Act 1993	Allows for recognition of native title through a claims and mediation process and also sets up regimes for obtaining interests in lands or waters where native title may exist	Not applicable.	Attorney-General's Department

3.4 GOVERNMENT GUIDELINES

This EP has been developed in accordance with the NOPSEMA Guidance Note for Environment Plan Content Requirements (N04750-GN1344, A339814, January 2024). This document provides guidance to the petroleum industry on NOPSEMA's interpretation of the OPGGS(E) to assist Titleholders in preparing EPs.

Other relevant government guidelines that have been taken into consideration during the preparation of this EP include:

EP

- Environment Plan decision making (NOPSEMA Guideline N04750-GL1721, A524696, January 2024).
- Consultation in the course of preparing an environment plan (NOPSEMA Guideline N04750-GL2086 A900179, May 2024).

EPBC Act Matters

- EPBC Act Policy Statement 1.1 – Significant Impact Guidelines – Matters of National Environmental Significance (DoE, 2013).

3.5 SOUTH-EAST REGIONAL MARINE PLAN

Australia's offshore waters have been divided into six marine regions to facilitate their management by the Australian Government under the EPBC Act. The operational area intersects the South-east Commonwealth Marine Region (SEMR), which extends from the south coast of New South Wales to Kangaroo Island in South Australia and around Tasmania.

The South-east Regional Marine Plan has been developed by the Australian Government in consultation with South-east State Governments, industry representatives, Indigenous groups, marine communities, and others with an interest in the marine environment. It illustrates how individual management actions by governments, industry and community members can be brought together. The Plan describes the significant progress and outlines actions to improve oceans management in the Region and achieve ecologically sustainable development. This integrated ocean management encourages management decisions based on cooperation and consideration of all ocean uses and users in the Region.

CHPL has reviewed the plan and considered its content in the development of this EP, particularly in the identification of and communication with relevant persons.

3.6 INTERNATIONAL INDUSTRY ENVIRONMENTAL CODES OF PRACTICE AND GUIDELINES

Several international codes of practice and guidelines are relevant to environmental management of the activity. Those of most relevance are described in this section. The Commonwealth legislation described in Table 3-1 lists the conventions and agreements that are enacted by, or whose principles are embodied in, that legislation.

While none of the codes of practice or guidelines described in this section have legislative force in Australia, they are considered to represent best practice environmental management (BPEM).

3.6.1 UNEP IE: ENVIRONMENTAL MANAGEMENT IN OIL AND GAS EXPLORATION AND PRODUCTION

In 1997, the United Nations Environment Programme Industry and Environment (UNEP IE) and the Oil Industry International Exploration and Production Forum (E&P Forum) developed an overview of issues and management approaches for environmental management in oil and gas exploration and production.

With regard to offshore petroleum, it contains a brief and broad list of environmental protection measures, mostly relating to the assessment of impacts (which is met through the preparation of this EP).

3.6.2 WORLD BANK GROUP EHS GUIDELINES

The *Environmental, Health and Safety Guidelines for Offshore Oil and Gas Development* (World Bank Group, 2015) is a technical reference document with general and industry-specific examples of good international industry practice. These guidelines are applied when one or more members of the World Bank Group are involved in a project and are used only for guidance here.

The document contains measures considered to be achievable in new facilities, using existing technology, at reasonable costs. The guidelines are designed to be tailored to the applicable hazards and risks established for a given project.

3.6.3 IOGP: BEST PRACTICE GUIDELINES

The International Association of Oil & Gas Producers (IOGP) has a membership including companies that produce more than 40% of the world's oil and gas. The IOGP provides a forum where members identify and share knowledge and good practices to achieve improvements in health, safety, environment, security and social responsibility. The IOGP's aim is to work on behalf of oil and gas exploration and production companies to promote safe, responsible and sustainable operations. The IOGP's work is embodied in publications that are made freely available on its website (www.iogp.org).

At November 2023, IOGP's members comprise over 90 members, comprising oil and gas exploration and production companies, associations and contractors. Although CHPL is not an IOGP member, relevant guidelines have been referenced in this EP as relevant.

3.6.4 IMCA: BEST PRACTICE GUIDELINES

The International Marine Contractors Association (IMCA), a leading trade association representing the vast majority of contractors and the associated supply chain in the offshore marine construction industry worldwide. IMCA's published technical and operational guidance is used globally across the offshore energy industry improving performance and driving-up standards. As of 2024, IMCA has over 700 members in over 60 countries. Hibiscus Oil and Gas is a member of IMCA.

3.6.5 IPIECA: BEST PRACTICE GUIDELINES

IPIECA is the International Petroleum Industry Environmental Conservation Association, established in 1974 (since 2002, IPIECA stopped using the full title). As of November 2023, IPIECA's members comprise 78 members, comprising oil and gas exploration and production companies, associations and contractors.

IPIECA's vision is for an oil and gas industry whose operations and products meet society's environmental and social performance expectations, with a focus on the key areas of climate and energy, environment, social and reporting. It develops, shares and promotes good practices and knowledge to help the industry improve its environmental and social performance. IPIECA's work is embodied in publications that are made freely available on its website (www.ipieca.org).

Although CHPL is not an IPIECA member, relevant guidelines have been referenced in this EP as relevant.

CHPL has applied IPIECA's recent *Mapping the Oil and Gas Industry to the Sustainable Development Goals: An Atlas* (July 2017) to its WSH-3 activity. Goal 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development) is the most relevant to the offshore activity, and has been met by incorporating EIA and ERA into this EP.

3.7 AUSTRALIAN INDUSTRY ENVIRONMENTAL CODES OF PRACTICE AND GUIDELINES

There are few Australian industry codes of practice or guidelines regarding environmental management for offshore petroleum operations. Those that do apply to this activity are briefly discussed in this section.

None of these codes of practice or guidelines have legislative force in Australia but are considered to represent BPEM. Aspects of each code or guideline relevant to the impacts and risks presented by the activity are described in the 'demonstration of acceptability' throughout Section 7 and 8.

3.7.1 NATIONAL STRATEGY FOR ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The National Strategy for Ecologically Sustainable Development (ESDC, 1992) defines the goal of Ecologically Sustainable Development (ESD) as "development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends."
Section 3A of the EPBC Act defines the principles of ESD as:

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

The principles of ESD have been taken into consideration in the development of the environmental performance standards outlined in Section 7 and 8 of this EP.

3.7.2 AEP: CODE OF ENVIRONMENTAL PRACTICE

In Australia, the petroleum exploration and production industry operate within an industry code of practice developed by Australian Energy Producers (AEP) (formerly the Australian Petroleum Production and Exploration Association (APPEA)); the APPEA Code of Environmental Practice (CoEP) (2008). This code provides guidelines for activities that are not formally regulated and have evolved from the collective knowledge and experience of the oil and gas industry, both nationally and internationally.

The APPEA CoEP covers general environmental objectives for the industry, including planning and design, assessment of environmental risks, emergency response planning, training and inductions, auditing and consultation, and communication. For the offshore sector specifically, it covers issues relating to geophysical surveys, drilling and development and production. The APPEA CoEP has been used as a reference for the EIA and ERA (Section 7 and 8 of this EP) to ensure that all necessary environmental issues and controls for petroleum production have been incorporated into the management of this activity.

4 RELEVANT PERSON CONSULTATION

CHPL recognises and respects the important role and the impact on relevant persons, including first nations people, that may occur because of the proposed activities, and has opened the channels of communication with stakeholders (as defined in Section 4.2) to provide an opportunity for open and honest communication that promotes integration of stakeholder values into its decision-making process. CHPL are committed to ensuring that relevant persons are identified and given sufficient information and reasonable time for consultation to allow them to make an informed assessment of the possible consequences of the proposed petroleum or greenhouse gas activity on them.

This provides the means for CHPL to identify individuals and groups as well as their needs, ideas, values, and issues of concern regarding the environmental and/or social impacts of the activity. The process allows CHPL to ascertain, understand and address the environmental impacts and risks that might arise from the proposed activity, and to receive information that the company might not otherwise receive. The company can use this information to enhance understanding of the environment, people, communities, heritage values, and social and cultural features that may be affected by the proposed activities.

In response to matters raised by relevant persons CHPL can consider and enact appropriate measures in the management of risks and impacts as part of the ongoing EP development. CHPL is committed to open, ongoing, and effective engagement with the communities in which it operates and providing information that is clear, relevant, and easily understandable.

This section of the EP defines the:

- Objectives of relevant person consultation and engagement;
- Applicable regulatory, consultation and engagement requirements and standards, including definition of relevant persons to be consulted;
- How relevant persons were identified and engaged;
- Relevant persons identified and verification process used;
- Communication and consultation methods utilised;
- How the consultation process was planned and tailored to the nature and scope of this EP;
- Summary of consultation to date; and
- Summary of how feedback has been considered, addressed and communicated.

The process of consultation and engagement with relevant persons remains ongoing and will continue until all field activities are completed.

4.1 RELEVANT PERSON CONSULTATION OBJECTIVES

CHPL's relevant person engagement strategy for this activity provides a structured approach to engagement activities in line with current best practice.

The key objectives of this engagement are to:

- Ensure every effort is made to identify relevant persons;
- Provide a verification process to ensure that all representatives of relevant persons truly represent the views of their communities and provide reliable feedback to their constituents;
- Ensure all relevant persons that may be affected are consulted on matters that may impact them;
- Provide stakeholders with access to clear and concise information and a point of contact for the project;
- Provide an opportunity for a two-way information exchange and meaningful stakeholder consultation;

- Provide ongoing updates and information to all relevant persons as the project develops; and
- Meet the stakeholder consultation requirements for EPs (see Section 4.2).

4.2 REGULATORY REQUIREMENTS

Stakeholder consultation is required under the OPGGS(E), as summarised in this section.

Section 280 (*Interference with other rights*) of the OPGGS Act states that a person carrying out activities in an offshore area should not interfere with other users of the offshore area to a greater extent than is necessary for the reasonable exercise of the rights and performance of the duties of the first person. In order to determine what activities are being carried out, and whether exploration or production activities may interfere with existing users, consultation is required.

In relation to the content of an EP, more specific requirements are defined in the OPGGS(E) Regulation 25. This regulation requires that a Titleholder consult with 'relevant persons' in the preparation of an EP. A 'relevant person' is defined in Regulation 25(1) as:

a) Each Department or agency of the Commonwealth to which the activities to be carried out under the EP, or the revision of the EP, may be relevant;
b) Each Department or agency of a State or the Northern Territory to which the activities to be carried out under the EP, or the revision of the EP, may be relevant;
c) The Department of the responsible State Minister, or the responsible Northern Territory Minister;
d) A person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP, or the revision of the EP; and
e) Any other person or organisation that the titleholder considers relevant.

Effective consultation should enable relevant authorities, persons and organisations whose functions, interests or activities may be affected to put forward their views and contribute to CHPL's understanding of the environment in which the activity will be undertaken and any associated impacts or risks. Further guidance regarding the definition of functions, interests or activities is provided in NOPSEMA's Consultation in the course of preparing and environment plan guideline (N04750-GL2086, A900179, May 2024). The phrase "functions, interests or activities" in regulation 25(1)(d) should be broadly construed as this approach best promotes the objects of the Regulations, including that offshore petroleum and greenhouse gas activities are carried out in a manner consistent with the principles of ESD. The phrase is a composite one, each part of which has work to do in identifying relevant persons:

- Functions – refers to "a power or a duty to do something".
- Activities – to be read broadly and is broader than the definition of 'activity' in regulation 4 of the Environment Regulations and is likely directed to what the relevant person is already doing.
- Interests – to be construed as conforming with the accepted concept of "interest" in other areas of public administrative law, includes "any interest possessed by an individual whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation".

Regulation 25(2) of the OPGGS(E) defines for the purpose of the consultation, the titleholder must give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person. Regulation 25(3) states that the titleholder must allow a relevant person a reasonable period for consultation.

Regulation 22(15) of the OPGGS(E) also defines a requirement for consultation in relation to the Implementation Strategy defined in the EP. In addition, Regulation 24(b) of the OPGGS(E) requires that the EP contain a summary and full text of this consultation.

Regulation 25(4) and 26(8) relates to sensitive information and that the relevant person may request that particular information the relevant persons provides in the consultation not be published, and all sensitive

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

4.3 RELEVANT PERSONS IDENTIFICATION

4.3.1 METHODS OF IDENTIFICATION

CHPL has used multiple methods to determine the relevant persons for this activity and grouped them as below.

Relevant Persons previously identified:

- Review of existing stakeholder database.
- Project team knowledge from past projects undertaken in the region.
- Existing networks.
- Review of Summary EPs published by NOPSEMA for activities in the Gippsland region.
- Review of National and Local Registers, including native title registers and native title claims.

Seeking out new relevant persons:

- Local knowledge of existing relationships to identify marine users and interest groups in area.
- Consider recommendations from local persons.
- Review of NOPSEMA guideline Consultation with Commonwealth agencies with responsibilities in the marine area (N-04750-GL1887 A706689, Jan 2024).
- Internet searches including social media platforms in the EMBA.
- Advertisements in local newspapers within EMBA.
- Advice from First Nations Groups.
- Notice on Hibiscus Petroleum Website of intended operations.
- Notice on LinkedIn.
- Advice from previously identified stakeholders.

Self-identification:

- Local newspaper advertisements.
- Notice on Hibiscus Petroleum Website of intended operations.
- Requests for previously identified persons to share information with contacts within their organisations or community area.

In the process of relevant person identification consideration was given to the nature and scale of the proposed activities, i.e. one wellhead and one conductor stub removal from a single location over a period of 5 to 7 days, utilising a single vessel that routinely conducts activities in the area. The limited impact on the environment in turn limits persons that may be affected.

The findings of the identification process yielded multiple potential relevant persons, each of which was evaluated using relevant persons criteria and determined that all identified parties would be considered as relevant persons within the scope of this EP.

4.3.2 RELEVANT PERSONS IDENTIFIED

Listed in Table 4-1 are the relevant persons with whom CHPL has identified as relevant persons and consulted with for this activity. The stakeholders are grouped into the five categories of relevant persons as outlined by the OPGGS(E) (as listed in Section 4.2).

Table 4-1 Stakeholders identified for this activity

Category 1 – Department or agency of the Commonwealth to which the activities to be carried out under the EP may be relevant	
Relevant Person	**Relevance**
Australian Fisheries Management Authority (AFMA)	Responsible for management of Commonwealth commercial fisheries, operating areas overlap with local fisheries.
Australian Hydrographic Office (AHO)	National Responsible for publication of nautical charts and other information for safety of ships navigating in Australian waters (including Notices to Mariners).
Australian Maritime Safety Authority (AMSA)	Australia's national agency responsible for maritime safety, protection of the marine environment, and maritime aviation search and rescue.
Department of Agriculture, Fisheries and Forestry (DAFF)	Primary policy responsibility for promoting biological, economic, and social sustainability of Australian fisheries.
Department of Defence	Utilises several maritime exercise areas in Australian waters and manages the risk of unexploded ordinance in areas of offshore activities.
Department of Climate Change, Energy, Environment and Water (DCCEEW)	Administers the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), the Underwater Cultural Heritage Act 2018 and the Environment Protection (Sea Dumping) Act 1981.
Director of National Parks	Government corporation responsible for the administration, management, and control of Australian Marine Parks.

Category 2 – Each Department or agency of a State to which the activities to be carried out under the EP may be relevant	
Relevant Person	**Relevance**
Department of Energy, Environment and Climate Action (DEECA) – formerly Department of Jobs, Precincts & Regions (DJPR)	Administers legislation related to Agriculture and biosecurity. Key support agency for wildlife affected by marine pollution.
Maritime Victoria – DEECA – formerly Department of Agriculture, Water and Environment (DAWE)	Responsible for biosecurity in Victorian ports.
Environment Protection Authority Victoria	Jurisdiction over environmental matters in Victoria, relevant for oil spill response where they may advise on waste management and response scenario.
Transport Safety Victoria – Maritime Safety	Responsible for oil spill response, working closely with vessel operators and waterway and port managers to provide expert knowledge, education and advice.
Parks Victoria	Manage significant stretches of land along Gippsland coastline and some maritime infrastructure.
Victorian Fisheries Authority (VFA)	Responsibility to improve Victorian fisheries, respond to any emergency or undertake compliance and enforcement activities. Control agency for shark hazards in Victorian waters and is a support agency for emergencies in the aquatic environment.
Category 3 – The Department of the responsible State Minister	
Relevant Person	**Relevance**
DEECA - Earth Resources Regulation (ERR)	Victoria's Regulator of exploration, mining, quarrying, petroleum, recreational prospecting and other earth resources activities. Assesses and authorises earth resource projects and enforces laws to ensure those projects are conducted such that the community and environment are safeguarded

Category 4 – A person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP	
Relevant Person	**Functions, interests and activities**
Adjacent Petroleum Titleholders	
3D Oil Limited (VIC/P57)	Oil and Gas company with licenses offshore in the Gippsland Basin
CarbonNet (DEECA)	Responsible for the CarbonNet Project, establishing a Carbon Capture and Storage (CCS) network in the Gippsland Basin
ExxonMobil (Esso Australia Resources Pty Ltd)	Oil and Gas company with licenses offshore in the Gippsland Basin
Fisheries	
Commonwealth Fisheries Association (CFA)	Independent association contributing to the formulation of effective and responsible fisheries policies.
Australian Southern Bluefin Tuna Industry Association (ASBTIA)	Representing the Southern Bluefin Tuna Industry working to maintain a high level of quality and training.
Bass Strait Central Zone Scallop Fishery	Responsible for efficient management and sustainable use of commonwealth fish resources.
Eastern Zone Abalone Industry Association	Wild catch abalone industry sector that operates in the Mallacoota regions of Victoria
Seafood Industry Victoria (SIV)	Non-government organisation. SIV is the representative peak body for the Victorian seafood industry, from professional fishers through to wholesale, processors and retail.
South-East Trawl Fishing Industry Association (SETFIA)	Incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.
Southern Shark Industry Alliance (SSIA)	Incorporated association with members from the Southern and Eastern Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.
Sustainable Shark Fishing Association (SSFA)	Represents fishers in the Southern and Eastern Scalefish and Shark Fishery, Gillnet Hook and Trap fisheries.
Tuna Australia	Represents statutory fishing right owners, holders, fish processors and sellers, and associate members of the Eastern and Western tuna and billfish fisheries of Australia.
Victorian Abalone Divers Association (VADA)	Commercial Abalone Divers representative body.
Relevant Person	**Functions, interests and activities**

Victoria Recreational Fishing (VRFish)	Represents recreational fishing in Victoria.
Victorian Scallop Fisherman's Association (VSFA)	Commercial scallop fishing representative body.
First Nations Peoples	
Gunaikurnai Land and Waters Aboriginal Corporation	Registered Aboriginal Corporation that represents the Gunaikurnai people, the Traditional Owners of our Country, as determined by the Victorian Aboriginal Heritage Council under the Aboriginal Heritage Act 2006.
Koorie Heritage Trust	To promote, support and celebrate the continuing journey of the Aboriginal people of Southeastern Australia.
Aboriginal and Torres Strait Islands - DCCEEW	Protecting important Indigenous areas and objects under threat, if it appears that state or territory laws have not provided effective protection.
Australian Heritage Council - DCCEEW	A body of Heritage Experts acting as the principal advisor to the government on heritage matters.
Category 5 – Any other person or organisation that the Titleholder considers relevant	
Relevant Person	**Functions, interests and activities**
Atoll Offshore	Commercial business based in Lakes Entrance providing support vessels for offshore works.
Australian Oceanographic Services	Commercial business providing access to underwater research vehicles, technology, and equipment.
Australian Wildcatch Fishing	Operates multiple fishing vessels in Gippsland and supports a variety of other vessels in areas of fishing gear, crew placement, quota and license management, and administration.
Bass Strait Game Fishing Club	Local game fishing club based from the Hastings boat ramp.
Bass Strait Bait and Tackle Lakes Entrance	Local business supporting the recreational fishing industry.
Boating Industry of Victoria	Peak body representing the recreational and light commercial marine industry.
Committee for Gippsland	Independent group established to represent all sectors of business, industry and community views to collaboration on regional priorities to benefit Gippsland communities.
Relevant Person	**Functions, interests and activities**
Corner Inlet Fisheries Habitat Association	Commercial fishers' association to facilitate and encourage better habitat protection and stewardship of the local marine resource.

East Gippsland Shire Council	Local council/authority responsible for the provision of services to local rate payers.
Farout Charters	Local fishing charter business operating from Lakes Entrance.
Game Fishing Association of Victoria	Governing body for game fishing in Victoria.
Gippsland Lakes Fishing Club	Local recreational fishing club based in Lakes Entrance.
Lake Tyers Beach Angling Club	Local recreational fishing club based in Lake Tyers.
Lake Entrance Fishermen's Co-operative	Fishing cooperative representing the interests of Lakes Entrance based commercial fishing vessels.
Lakes Entrance Visitor Information Centre	Information centre providing local information for visitors to the area.
Life Saving Victoria	NFP organisation working to prevent aquatic related death and injury in all Victorian communities.
Maritime Industry Australia Ltd	Organisation established to be the voice and advocate of the Australian maritime industry.
Mitchelson Fisheries Pty ltd	Commercial fishing company based in Lakes Entrance.
Mornington Peninsula Shire	Local council/authority responsible for the provision of services to local rate payers.
Panama II fishing vessel	Commercial octopus fishing vessel operating from Lakes Entrance.
Piscari Industries Pty Ltd	Commercial fishing company based in Lakes Entrance.
Port of Hastings	Responsible for managing the operations of the Port of Hastings.
South Gippsland Game Fishing Club	Family oriented fishing club based in Leongatha Victoria.
South Gippsland Shire Council	Local council/authority responsible for the provision of services to local rate payers.
Victoria Game Fishing Club	Governing body for Game Fishing in Victoria.
Victoria Regional Channels Authority	Victorian State government agency/authority managing commercial navigation in the port waters of Geelong and Hastings.
Relevant Person	**Functions, interests and activities**
Wellington Shire Council	Local council/authority responsible for the provision of services to local rate payers.
Yachting Victoria	Provides sailing advice for Southeastern Australia.
Woodside Beach SLSC	Local surf lifesaving club based at Woodside Beach.
Australian Wildlife Conservancy	Independent, non-profit organisation, working to conserve threatened wildlife and ecosystems.

Bush Heritage	Non-profit organisation with headquarters in Melbourne and operating throughout Australia.
Community Over Mining	Non-government organisation covering many topics in Gippsland and around Australia including pollution to air, land and water.
Extinction Rebellion Australia	eNGO focused on persuading governments to act on climate and ecological matters.
Friends of the Earth Australia	eNGO working to protect and/or educate about the natural environment.
Greenpeace	eNGO campaigning for a green and peaceful future.
The Nature Conservancy	Environmental conservation charity whose mission is to conserve the lands and waters on which all life depends.
The Wilderness Society	eNGO working to protect and restore wilderness and natural processes across Australia.
Trust for Nature	eNGO working to permanently protect habitat on private land to give native plants and animals safe places to live.
Wildlife Victoria	Community organisation providing Wildlife Emergency Response.
World Wide Fund for Nature	eNGO that works in the field of wilderness preservation and the reduction of human impact on the environment.

Table 4-2 Provision of Information to relevant person

Description	Information type	Follow up
Organisations or individuals whose functions, interests or activities may be impacted by the activity. Representative body for fishers who provide information to their members.	Information sheet and/or provision of information as per organisation's consultation guidance. Provision of further information where required. Meeting or phone call where required.	In the event there is no response to initial email, follow up via email or phone call will be completed.

4.4 ENGAGEMENT APPROACH AND METHODOLOGY

The stakeholder engagement method and approach employed for the WSH-3/Wardie-1 activity is described in this section.

4.4.1 ENGAGEMENT APPROACH

The approach to stakeholder consultation has considered the International Association for Public Participation (IAP2) spectrum, deemed to be best practice for stakeholder engagement. In order of increasing level of public impact, the elements of the spectrum and their goals are as follows:

- Inform – to provide the public with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions.
- Consult – to obtain public feedback on analysis, alternatives and/or decisions.
- Involve – to work directly with stakeholders throughout the process to ensure that public concerns and aspirations are consistently understood and considered.
- Collaborate – to partner with the public in each aspect of the decisions, including the development of alternatives and the identification of the preferred solution.
- Empower – to place final decision-making in the hands of the stakeholders.

Given scope, nature and duration of the decommissioning activity, the fact that the WSH-3 well and the Debris cap, and Wardie-1 conductor have been in place for over 15 years without any incident and that only vessel-based activities are associated with the activity, stakeholder consultation has been largely limited to 'inform' only, with 'consult' undertaken with selected stakeholders based on the information category they were assigned (as per Table 4-2) and their response to primary information provided. Through meaningful engagement with relevant persons CHPL have involved and collaborated with relevant persons throughout the development of the EP where required.

Under the regulatory regime for the approval of EPs, the decision maker is the regulator. This being the case, the final step in the IAP2 spectrum, 'Empower', has not been adopted.

4.4.2 ENGAGEMENT METHODOLOGY

Following the initial stakeholder consultation conducted in 2019, a secondary consultation was initiated in July 2022 to advise of the revision to the EP to include the Wardie-1 conductor. Following the appeal decision *Santos NA Barossa Pty Ltd v Tipakalippa (2022) FCAFC 193* additional stakeholders were identified and contacted via telephone and email in December 2022.

With the decision now made to decommission the WSH-3 well this revised EP has been prepared and a new relevant person consultation process initiated in September 2023. The primary tool and method that was used for relevant person engagement was the preparation and distribution of a project information sheet and invitation to comment to the stakeholders identified in Table 4-1. The information flyer was generated and issued via email using Microsoft Outlook, this program allowing CHPL to track who opens the flyer and thus gauge interest in the activity even in the absence of responses.

The information flyer (**Appendix 1**) introduces CHPL, provides the location and a brief history on the wells, details the titleholder and the proposed decommissioning activity. It outlines environmental considerations and regulatory approvals, and the relevant person consultation process. It also notes that the relevant person can request that any information provided not be published in the revised EP. It provides details about the activity, its potential impacts, mitigation measures and contact details if further information is required or further discussions in relation to the activity.

The secondary method to identify relevant persons was via local advertisements as per below:

The advertisements were run a repeated number of times in newspapers in the local area as detailed in Table 4-3.

Table 4-3 Summary of Newspaper Advertising

Newspaper	Dates advert run
Lakes Post	18 and 25 October 2023
Snowy River Mail	18 and 25 October 2023
Bairnsdale Advertiser	18 and 25 October 2023
Gippsland Times	17 and 24 October 2023
South Gippsland Sentinel Times	17 October and 7 November 2023

Further, a link titled "West Seahorse Environment Plan Revision (pdf)" is posted on the Hibiscus Petroleum Berhad website, at the address below, which provides a direct link to the information flyer/invitation to comment.

https://www.hibiscuspetroleum.com/asset-portfolio/australia/

Information on risks and management measures associated with the proposed activities have also been posted on this website, providing relevant persons with further information about proposed activities.

The following was also posted on LinkedIn:

Australian Operations Update

Our wholly-owned subsidiary, Carnarvon Hibiscus Pty Ltd (CHPL), intends to fully decommission the West Seahorse 3 well and remove the Wardie-1 conductor from within VIC/RL17.

A vessel-based campaign will be conducted to remove the wellhead and conductor stubs, and operations are targeted for the summer months of 2024/25 when the sea state is generally at its calmest.

This requires CHPL to revise the Environment plan to cover the permanent abandonment works, and as such we are seeking input from any relevant persons who may be affected by the activity and have an interest in learning more and making comment.

The information flyer can be viewed below and includes contact details should you wish to get in touch.

#BassStraitDecom #CarnarvonHibiscusDecom #WestSeahorse

4.4.3 CONSULTATION WITH FISHERIES ASSOCIATIONS

CHPL has consulted with all relevant fishing industry groups who have interests over or adjacent to the Operational Area with particular focus (including phone calls) on fisheries with recent catch effort in the area. Where fisheries have no recent catch effort in the area, distribution of the project information flyer has been considered appropriate.

CHPL engaged the services of Tuna Australia to assist with consultation with tuna fisheries relevant to the West Seahorse-3 & Wardie-1 wellhead removal activities, being the Eastern Tuna and Billfish Fishery (ETBF), the Southern Bluefin Tuna Fishery (SBTF) and Australian Skipjack Fishery (east). Some Tuna Australia members hold southern bluefin tuna (SBT) fishing rights and catch SBT using longlines. These members were provided consultation materials consistent with the fishery overlap.

Tuna Australia has developed a consultation process with all concession holders (members and non-members) in all relevant Australian tuna fisheries. Tuna Australia has established a database which allows for tailoring consultations to specific subsets of fishers or expanding the consultation to their full complement of contacts where required.

For Hibiscus Petroleum's West Seahorse-3 & Wardie-1 well abandonment consultation, Tuna Australia engaged all concession holders in the ETBF, and permit holders in the Australian skipjack fishery (east). Our consultation package was sent by Tuna Australia to:

- 116 entities who hold 435 concessions in the ETBF
- 17 permit holders in the Eastern sector Australian Skipjack fishery

From Tuna Australia's database statistics, the consultation reached:

- 133 recipients (100% delivery rate of the package) covering concession holder details described above
- 58.6% engaged with the material past the first layer of information (e.g. drilled down further into links)

Tuna Australia's benchmarking suggests that engagement with concession holders was consistent the relevant industry average (56% v 56.9% for Agriculture and Food Services). This is slightly less than the last two energy consultations that Tuna Australia have run which have averaged 60%.

This consultation returned a relatively small number of concession holders supplying feedback compared to other recent consultations. Tuna' Australia's assessment is that the proposal is viewed as noncontroversial, with the main issues summarised in Table 4-5.

After reviewing the proposed works and consultation feedback for the West Seahorse-3 & Wardie-1 well abandonment activities, Tuna Australia concluded that overall the activity poses as a low risk to the tuna fishing industry.

4.4.4 PROVISION OF INFORMATION

The OPGGS(E) Regulations require titleholders to give each relevant person sufficient information to allow the relevant person to make an informed assessment of potential effects on their functions, interests or activities from the activities in the EP. Provision of information is responsive and adaptive to the individual needs and circumstances of the relevant person seeking the information.

Updates on the West Seahorse / Wardie -1 project, and advice about future activities have been provided via email and published on the Hibiscus website. Copies of these emails (and responses from relevant persons) and consultation specific to this EP revision has been included in Appendix 2 and the Sensitive Information Report submitted to NOPSEMA.

CHPL believe that reasonable timeframes have been afforded to all relevant persons and is in a position to close consultation required for the development of this EP. A further email was issued to all relevant persons CHPL had not yet received a response from requesting that to enable feedback to be included in this resubmission responses were requested by 15 July 2024.

4.4.5 MANAGEMENT OF OBJECTIONS AND CLAIMS

Objections or claims raised by relevant persons during consultation have been assessed and substantiated, as appropriate, by evidence, such as publicly available credible information and/or scientific data, including fishing data.

Where the objection or claim is substantiated, it has been assessed against CHPL's risk assessment process and, where appropriate, controls applied to manage impacts and risks to ALARP and an acceptable level. Relevant persons have been provided with feedback as to how their objection or claim has been assessed and if any controls were put in place to manage the risk or impact to ALARP and an acceptable level. If the objection or claim is raised after the EP is accepted and triggers a revision of the EP this will be managed in accordance with CHPL Management of Change procedure (HPB-SP-DOC-PCD02) and the relevant person will be advised of the process.

4.4.6 REASONABLE PERIOD

Initial emails to all relevant persons were sent between 11 and 19 September 2023 with follow up emails and phone calls made during October. CHPL considered the initial consultation period (12 weeks ahead of revised EP submission to NOPSEMA) provided an adequate timeframe in which stakeholders could assess potential impacts of the activity on their functions, activities or interests and provide feedback to CHPL.

As of June 2024, any relevant persons who had not yet responded to any consultation efforts were contacted again (via further follow up email or phone call) and asked for a response to be sent by 15 July 2024. This marks over ten months of consultation effort for this activity.

4.4.7 ASSESSMENT OF RELEVANT PERSON OBJECTIONS AND CLAIMS

A detailed summary of the consultation with relevant persons is included in Appendix 2 and Table 4-5.

For all responses received by CHPL during the engagement, the merit of each of these responses was assessed. If an objection or claim was raised by a relevant person, they would be provided feedback as to how it was assessed, whether the objection or claim was substantiated, and if so, if any additional controls were put in place to manage the impact or risk to ALARP and an acceptable level.

Where an objection or claim was substantiated by evidence such as publicly available credible information and/or scientific data, including fishing data, this was assessed as per the risk assessment process detailed in Section 6 and controls applied where appropriate to ensure impacts and risks are managed to ALARP and an acceptable level.

Copies of the full text of any responses by relevant persons have been provided to NOPSEMA as a Sensitive Information Appendix under Regulation 26(8) of the OPGGS(E).

To date there have been no objections, claims or issues raised by any of the relevant persons contacted directly, other than a preference to leave the infrastructure in situ (refer to correspondence with South Gippsland Game Fishing Club and Bass Strait Bait and Tackle Lakes).

To date there have been no responses received to any of the newspaper advertisements run in the local newspapers, from the information flyer being posted on the Hibiscus Petroleum Berhad website, or to the post on LinkedIn.

Table 4-4 provides a summary of information provided to relevant persons and status of consultation undertaken to date for this revision of the EP.

Table 4-4 Information provided to relevant persons and current status of consultation

Format	Description of information provided	Key dates	Next steps
Information flyer	An Information Flyer document was prepared and distributed. The document was prepared with sub-regulation 25(2) and associated guidance in mind to ensure it adequately described the activity, including the risks associated with the activities (which are provided on the Hibiscus website). The document can be found in Appendix 1.	11 – 19 September 2023 – information package emailed to all relevant persons. October 2023 – follow up email sent or phone call to most relevant persons. June 2024 – further follow up sent to those relevant persons whom no response had been received to date.	Consultation complete. No further actions required.
Individual Responses	CHPL provided written or verbal responses on the phone to all written enquires received from stakeholders to address their specific concerns throughout the duration of EP development. A separate sensitive information report (SIR) submitted to NOPSEMA contains all individual responses provided to stakeholders as part of this process.	N/A Responses provided as received throughout consultation period.	Consultation complete. No further actions required.
Mail-outs, emails and phone calls	Mail-outs, emails and phone calls were used to consult with relevant persons as part of the development of the EP. The sensitive information report contains all of the mail-out correspondence, emails and phone call details, captured as part of relevant person consultation.	N/A Responses provided as received throughout consultation period.	Consultation complete. No further actions required.

4.5 SUMMARY OF RELEVANT PERSON CONSULTATION

A summary log of stakeholder consultation undertaken, together with CHPL's responses and assessment of merit is included in Appendix 2 and detailed below in Table 4-5.

Table 4-5 Assessment of merit of any objections, concerns or claims

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
Australian Fisheries Management Authority (AFMA)	No specific comments. Encourage CHPL to talk directly with commonwealth fishing operators in the area and provided contact details for relevant industry associations.	Comment has merit and has been actioned.	In accordance with this guidance, as part of CHPL's standard approach to consultation the relevant fishing industry associations have been engaged with during the development of the EP.
Australian Hydrographic Office (AHO)	Acknowledged and noted will be included in charting information.	Noted.	Well and the PSZ are already marked on navigation charts and information will be updated when operations commence. No further action required.
Australian Maritime Safety Authority (AMSA)	• Australian Hydrographic Office (datacentre@hydro.gov.au) to be contacted no less than four weeks before operations, with details relevant to the operations for the promulgation of related notices to mariners. • Notify AMSA's Joint Rescue Coordination Centre (JRCC) (rccaus@amsa.gov.au, Ph 1800 641 792) for promulgation of radio-navigation warnings at least 24-48 hrs prior to	CHPL considers these comments have merit and have incorporated these into the EP.	• Item included in Table 4-6 to ensure notification 4 working weeks prior to commencement. • Item included in Table 4-6 to ensure notification 48 hrs prior to operations commencing and at cessation. • Item included in Table 4-6 to ensure notification to AHO and JRCC. • Vessels comply with the International Rules for Preventing

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
	operations commencing and at cessation of operations. • Plan to provide updates to both the Australian Hydrographic Office and the JRCC on progress and, importantly, any changes to the intended operations. • Exhibit appropriate lights and shapes to reflect the nature of operations.		Collisions at Sea (COLREGs) (Shipping traffic described in Section 5.7 of EP).
Australian Southern Bluefin Tuna Industry Australia (ASBTIA)	No concerns, keep updated if change to activity.	Noted.	No further action required.
Australian Wildlife Conservancy (AWC)	Acknowledged receipt however don't believe AWC would be considered a relevant person.	Noted.	No further action required.
Australian Wildcatch Fishing (AWC)	Acknowledged receipt and advised consult via SETFIA.	Noted.	SETFIA already contacted as a Relevant Person. No further action required.
Bass Strait Game Fishing Club	Acknowledged receipt and no intention to respond.	Noted.	No further action required.
Bass Strait Bait and Tackle Lakes Entrance	Advised not directly affected but would support infrastructure remaining in place.	Comment has merit and has been actioned.	CHPL have attempted numerous times to contact Bass Strait Bait and Tackle Lakes Entrance to explain why infrastructure is being removed. No further action required.

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
Boating Industry of Victoria	Acknowledged receipt and no impact on BIAVic and no intent for further comments.	Noted.	No further action required.
Bush Heritage Australia (BHA)	Acknowledged receipt and will not be commenting.	Noted.	No further action required.
CarbonNet (DEECA)	• Interested in risk assessment of activities and timing in relation to potential concurrent works and their impact. • Requested copy of revised EP for review.	Comment has merit and has been actioned.	• Information to questions answered in phone call. Discussion of risks with concurrent operations and potential for shared resources, agreed to remain in ongoing communication. • EP will be provided to CarbonNet upon acceptance (Table 4-6).
Community Over Mining	• Questions around whether dredging is planned, potential for leakage pathways, seabed disturbance and crowding of proposed ESSO decommissioning.	Comment has merit and has been actioned.	• Response provided that dredging is not proposed. • Risk review conducted as part of WOMP concluded risk of hydrocarbon fluids release from the WSH-3 is no different to a permanently abandoned well. Therefore, it was concluded that risks to well integrity and to the receiving environment from leaking hydrocarbons is nil. Wardie-1 is permanently abandoned well and as such risks to well integrity and to receiving environment from leaking hydrocarbons is nil. • Following removal of infrastructure, it will be transported to

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
			the Australian mainland for recycling and disposal at a licenced facility. A location has not yet been determined but will be in accordance with relevant legislation. • Proposed activity is for Q1 2025, but may not occur until 2026 if there are vessel availability issues. According to Esso decommissioning report removal activities will not be until 2026, but given the small size of the wellhead and the higher likelihood of the removal activity occurring in 2025, CHPL do not expect to be competing with Esso at onshore facilities.
Department of Agriculture, Fisheries and Forestry (DAFF) - Biosecurity	Acknowledged receipt and no further comments.	Noted.	No further action required.
Department of Defence (DOD)	• Activity is located within restricted airspace. • Advised of risk of UXOs. • Continued liaison with AHS for Notice to Mariners required. • Communication with Air Force HQ prior to activity commencement.	CHPL considers these comments to have merit and have incorporated these into the EP.	• Item included in Table 4-6 to ensure AHS notification three weeks prior to commencement of activities. • Item included in Table 4-6 to ensure communication with Air Force HQ prior to activity commencement.
Department of Energy, Environment and Climate Action	• Questions around vessels including what vessels, where have they been operating, condition of hull, how long they	Comment has merit and has been actioned.	Information to questions answered in phone call.

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
(DEECA) -Biosecurity and Agriculture Services	will be operating and what ports will be used.		Vessel will be chartered locally (not imported) and operate from Barry Beach.
Department of Energy, Environment and Climate Action (DEECA) - Earth Resources Regulator (ERR)	No comments, however, recommend reach out to Planning & Approvals Program within DEECA.	Comment has merit and has been actioned.	Information flyer sent to Planning & Approvals within DEECA.
Department of Energy, Environment and Climate Action (DEECA) - Planning and Approvals	Request for copy of revised EP for review.	Comment has merit and has been actioned.	EP will be provided to DEECA upon acceptance (Table 4-6).
Director of National Parks (DNP)	• Confirmed no authorisation required as outside AMP and no objections or claims at this time. • When preparing the EP should consider AMPs and their representativeness and all impacts and risks to AMPs identified and shown to be managed to acceptable level and ALARP. Consistency with the management plans should also be included. • Notification details in the event of an incident provided. • DNP should be made aware of oil/gas pollution incidences which occur within a marine park or are likely to impact on a marine park as soon as possible. Notification should be provided to the 24-	CHPL considers these comments to have merit and have incorporated these into the EP.	• EP includes information on the AMPs in Section 5.3.1. With no AMP in the operational area there is not expected to be any impact from planned activities on any AMPs. • Triggered consultation item included to notify AMP DG if any change to planned activity that results in change in risk to AMP (Table 4-7). • Item included in Table 4-7 to ensure DNP notification in event of an oil/gas pollution incident.

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
	hour Marine Compliance Duty Officer on 0419 293 465. Notification should include: - Titleholder details - Time and location of the incident (including name of marine park likely to be affected) - Proposed response arrangement as per the Oil Pollution Emergency Plan - Confirmation of providing access to relevant monitoring and evaluation reports when available and - Contact details for the response coordinator.		
EPA Victoria	Works in international waters, will not involve EPA. If bringing anything to shore implications under legislation.	Noted.	CHPL will comply with requirements to bring items to shore in accordance with relevant legislation.
Far Out Charters	Acknowledgement of receipt. Currently working in area, understand PSZ and will remain outside. Offer to provide vessel support if required.	Noted.	No further action required.
Game Fishing Association of Victoria	Will distribute to others in the area.	Noted.	No further action required.
Gippsland Lakes Fishing Club	Acknowledgement of receipt and will forward information on to members.	Noted.	No further action required.

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
Gunaikurnai Land and Waters Aboriginal Corporation	No Native Title rights over operations area. Expectation that all genuine efforts are made to manage and protect cultural heritage and Country. Asked to be kept up to date as project progresses.	Noted.	• Item included in Table 4-6 to ensure GLaWAC receive notifications of project updates.
LifeSaving Victoria	Acknowledgement of receipt and have forwarded information on to members.	Noted.	No further action required.
Maritime Industry Australia	Acknowledgement of receipt and will distribute information to members.	Noted.	No further action required.
Panama II fishing vessel	Advised as members of Lakes Entrance Fisherman's Co-op and will respond via them.	Noted.	No further action required.
Piscari Industries Pty Ltd	Advised outside EMBA and will not be impacted.	Noted.	No further action required.
Ports Victoria	No direct comment. Provided details for appropriate state agencies to contact in regard to marine pollution and emergency response.	Comment has merit and has been actioned.	Suggested agencies are listed within the OPEP for notifications. No further action required.
Seafood Industry Victoria (SIV)	Request for all details in communication to remain confidential.	Comment has merit and has been actioned.	Sensitive Information Report (SIR) includes details of communications.
South-East Trawl Fishing Industry Association (SETFIA)	• Questions around how long wells will be in non-production and plans for decommissioning and timing of activities.	Comment has merit and has been actioned.	• Wells were drilled as exploration wells in 2008, on completion of the work both wells were temporarily abandoned (suspended) which included removal of

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
			the wellhead on the Wardie-1 leaving the conductor stump protruding from the seabed. • Plan to remove the wellhead/conductor to a minimum of 10 ft below the seabed in early 2025, but may occur in 2026.
South Gippsland Game Fishing Club	Acknowledgement of receipt. Part of GFA and stance is to leave infrastructure in place.	Comment has merit and has been actioned.	Response sent explaining requirement to remove wellheads. No further action required.
South Gippsland Shire Council	Acknowledgement of receipt and has been distributed to all relevant staff.	Noted.	No further action required.
The Wilderness Society (TWS)	• Questions around planned activities, ongoing monitoring of wells and contingencies in place if plugging fails. • Not specific to this project but industry wide, TWS have concerns regarding the below: - Absence of minimum requirements and standards for well plug abandonment in Australia, along with lack of well inspection.	Comments have merit and have been actioned.	• EP proposes no ongoing monitoring is required as infrastructure will be removed, and no items left in the seabed. • A post ROV survey will be completed to ensure no oil and gas related debris is present. • Wells are already plugged; this activity is for removal of the wellhead infrastructure itself. • Risk review conducted as part of WOMP concluded risk of hydrocarbon fluids release from the WSH-3 is no different to a permanently abandoned well. Therefore, it was concluded that

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
	- Absence of ongoing monitoring (that should be undertaken by government and cost recovered from industry).		risks to well integrity and to the receiving environment from leaking hydrocarbons is nil. Wardie-1 is permanently abandoned well and as such risks to well integrity and to receiving environment from leaking hydrocarbons is nil. • No further action required from CHPL regarding TWS industry concerns.
Tuna Australia	• Recommend CHPL contact ASBTIA, to ensure consultation with the purse seine sector of the SBT fishery. • Some concession holders raised potential spatial conflict with vessels and infrastructure supporting the proposed activities. • Temporary presence of support vessels required for the proposed activities, requires advance notice through the "48 hour look ahead" process to Tuna Australia, to then notify concession holders during operation phase.	Comments have merit and have been actioned.	• ASBTIA have already been consulted and had no immediate concerns with the proposed works. • Item included in Table 4-6 to ensure AHO contacted no less than 4 weeks before operations to promulgate appropriate Notice to Mariners (NTM) which will ensure other vessels receive information on activities. • Item included in Table 4-6 to provide Tuna Australia with 48 hours advance notice of operations commencing so Tuna Australia can notify concession holders during operational phase. • CHPL have already consulted with relevant industry bodies and associations

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
	• Consulting with other industry associations is recommended as cross-endorsements can occur. • Cumulative impacts in the Gippsland region, suggest an assessment of other activities likely to be occurring at the same time.		including but not limited to; Commonwealth Fisheries Association (CFA), Australian Fisheries Management Authority (AFMA), Victoria Fishery Authority (VFA), ASBTIA, Bass Strait Central Zone Scallop Fishery, Eastern Zone Abalone Industry Association, Seafood Industry Victoria (SIV), South-East Trawl Fishing Industry Association (SETFIA), Southern Shark Industry Alliance (SSIA) and Abalone Council Victoria and deem this appropriate for the nature and scale of the activities. • CHPL have considered cumulative impacts in the region, by undertaking an assessment of other activities likely to be occurring at the same time in the vicinity of the project. According to our research there are two other projects that may occur in a similar timeframe to proposed activities, however these are several kilometres away and unlikely to have any impact on eachother. Interference/ displacement with other users is detailed in Section 7.5.3. The project PSZ also doesn't overlap with any other operations. Table 4-6 of the EP includes a commitment to ensure AHO are contacted no less than 4

Relevant Person	Relevant Person objection, concern or claim	CHPL assessment of merit	CHPL Response
			weeks before operations to promulgate appropriate Notice to Mariners (NTM) which will ensure other vessels receive information on activities. No further action required.
Victoria Fisheries Authority (VFA)	• Please seek comment from SIV, VRFish, Abalone Council and Rock Lobster Advisory Group. • Will commercial and recreational fishing be permitted in the decommissioned fields. • Question whether intent to sever both conductors at or below the seabed.	Comments have merit and have been actioned.	• SIV, VRFish, Abalone Council and Rock Lobster Advisory Group contacted as suggested. • Following decommissioning there will be no restrictions on the field, allowing commercial and recreational fishing over the entire field. • Intend to sever the conductors at or below the seabed so that nothing is left protruding.
Wellington Shire Council	Acknowledgement of receipt and do not intend to provide further comment.	Noted.	No further action required.
Woodside Beach SLSC	• Asked about potential risks to Woodside Beach and how these risks will be mitigated.	Comment has merit and has been actioned.	Email response detailing very low risk of vessel collision and mitigation strategies and modelling undertaken.

4.5.1 ONGOING CONSULTATION WITH RELEVANT PERSONS

While the pre-EP submission consultation has ended, CHPL will continue to monitor legislative changes and the general public domain to identify any relevant persons or impacted parties and consult with relevant persons regarding the activity should any further be identified or come forward and express interest in doing so.

Whilst CHPL considers that, for the purpose of this EP, its consultation is now complete, it will continue to consult with relevant persons by providing project updates as information becomes available in relation to specific activities and broader project information, via emails and by the provision of information on the Hibiscus website or other means (such as advertising) as appropriate, particularly once the dates for the activity have been confirmed.

Table 4-6 outlines the ongoing consultation (and timing) requirements for the activity. Records of ongoing relevant person consultation are maintained by CHPL. Any changes to the activity that could result in a change to the interests, functions, or activities to relevant persons will be subject to HPB Management of Change process (Section 9.7) in order to determine if relevant persons and potentially relevant persons would be significantly affected by the change. If so, additional information will be provided to relevant persons and any potentially relevant persons for the purpose of seeking feedback on the proposed changes.

Additional triggered consultation actions are provided in Table 4-7.

The purpose of ongoing consultation is not to elicit further information for the management of the activity, but rather to maintain relationships and notify relevant persons of any significant changes to the activity or risk.

Any potentially new relevant persons or changes to existing relevant persons will be identified through ongoing consultation, in accordance with Section 4.3. Where potentially new relevant persons are identified, they will be contacted and provided information about the activity relevant to their functions, interests, or activities. Any objections or claims will be managed as per Section 4.4.5. CHPL will undertake additional triggered consultation as outlined in Table 4-7, should an unplanned event occur.

Table 4-6 Standard consultation actions

Activity	Frequency and method	Responsibility
Notification of Australian Hydrographic Office.	No less than four weeks prior to any significant change to operations commencing email AHO (datacentre@hydro.gov.au) for the promulgation of related notices to mariners.	HSSE Advisor
Notification of Air Force HQ (DOD).	No less than four weeks prior to activity commencement.	HSSE Advisor
Notification of AMSA Joint Rescue Coordination Centre (JRCC).	To notify AMSA's JRCC (rccaus@amsa.gov.au Ph 1800 641 792) 24-48 hrs prior to operations commencing with following details regarding the vessel: • Name • Call sign • Maritime mobile service identity (MMSI) • Satellite communications details (including INMARSAT-C and satellite telephone numbers)	HSSE Advisor

Activity	Frequency and method	Responsibility
	• Area of operation • Requested clearance from other vessels • Operations start and end.	
Notification of Tuna Australia	Notify Tuna Australia 48 hours prior to operations commencing so they can notify concession holders.	HSSE Advisor
Notify AHO that infrastructure has been removed	Following completion of activity confirmation that infrastructure has been removed will be provided via email to AHO.	HSSE Advisor
AHO and JRCC	Provide updates to the AHO and JRCC should there be changes to the activity.	HSSE Advisor
Provide relevant persons that have requested a copy of the EP and OPEP.	Email within three months of acceptance.	HSSE Advisor
Provide relevant persons notification of EP acceptance	Email within three months of acceptance to all relevant persons to advise of EP acceptance and provide link to accepted EP on NOPSEMA website.	HSSE Advisor
Notification of project updates to Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC).	Email updates as needed. At least commencement and cessation notices to be provided.	HSSE Advisor
Notification of commencement and cessation activity to NOPSEMA.	Notification of commencement and cessation of the activity under Regulation 54 of the OPGGS (E).	HSSE Advisor

In addition, CHPL will undertake additional triggered consultation as outlined below, (Table 4-7).

Table 4-7 Triggered consultation actions

Activity	Frequency and method	Responsibility
Feedback received from Relevant Person.	Follow consultative process outlined in this EP to understand if a revision to the EP is required.	HSSE Advisor
Change to risk profile in operational area or EMBA.	The deviation will be assessed through the Management of Change procedure to understand which relevant persons and potentially relevant persons may need to be notified describing the change in risk profile and proposed risk management.	HSSE Advisor
Deviation to operations from those originally provided in consultation.	Notify AMP Director General any change to risk within AMPs. Notification to relevant persons via email.	HSSE Advisor.
Pollution incidences that may be likely to impact on an AMP.	Notify AMP Director General within 24 hours of incident report and prior to spill response activities within AMP on 0419 293 465. To include titleholder details, time and location of the incident, proposed response arrangements and locations as per the OPEP and contact details for the response coordinator.	HSSE Advisor.

5 DESCRIPTION OF THE EXISTING ENVIRONMENT

In accordance with OPGGS(E) Regulation 21(2), the EMBA for this activity is described in this section, together with its values and sensitivities.

Credible spill scenarios which may be experienced during the WSH-3 decommissioning activities are shown in Table 5-1 below. There is no risk of an oil release from the wells (due to the four cement plugs in each well).

Table 5-1 Potential Oil Spill Scenarios

Scenario	Incident	Source/Location	Oil Type	Potential Release (m^3)	Spill Duration	Release Depth (m)	Level
1	Vessel Tank Leak	West Seahorse	MDO	200	6hours	0	2
2	Vessel Deck Drain Spill	West Seahorse	Lubricating & Hydraulic Oils	<1m^3	1hour	0	1
3	ROV Hydraulic Line Failure	West Seahorse	Hydraulic Oils	~250litres	1hr	39	1

As such, the EMBA for this activity has been defined as the area potentially impacted during decommissioning activities from a vessel collision during the proposed activity resulting in a worst case hydrocarbon spill.

Spill modelling was conducted for a vessel-based oil spill and is included in Section 8.4. The volume modelled (200 m^3 over 6 hours) is likely to be significantly greater than potential volumes during decommissioning activities due to the size of the potential vessel, the modelling is considered valid for the proposed decommissioning activities to consider the worst case scenario.

The EMBA has been determined using the low exposure thresholds summarised in Table 5-2, which are further detailed in Section 8.4.2.2, and the EMBA is shown on figures throughout Section 5.5. This indicates the potential area that may be contacted (low exposure) in the event of a diesel spill and defines the EMBA. A search of the protected matters database in June 2024 identified protected areas and matters of National environmental significance (MNES) within the EMBA, this is provided in Appendix 3.

Table 5-2: Hydrocarbon Thresholds

Hydrocarbon Phase	Exposure Value		
	Low	Moderate	High
Surface (g/m^2)	1	10	50
Shoreline accumulation (g/m^2)	10	100	1000
Dissolved aromatics (ppb)	6	50	400
Entrained (ppb)	700	7050	80,400

5.1 ENVIRONMENTAL SENSITIVITIES

Environmental sensitivities (including heritage and socio-economic values) within the predicted EMBA are described in this EP. Additionally, environmental sensitivities are identified on the Oil Spill Response Atlas (OSRA) for the Gippsland coastline.

General characteristics of the region are described below:

Gippsland Basin: The seabed in the region consists of sediment flats inter-dispersed with small patches of reef, bedrock and consolidated sediment. Sandy seabed is only occasionally broken by low ribbons of reef (previous shorelines during ice age) which support red seaweeds and encrusting animals that can survive the sandy environment.

Gippsland Coast**:** The shoreline of the Gippsland coast is bounded by a considerable variety of ecologies:

- *Ocean Shoreline*: The Bass Strait ocean shoreline from Wilsons Promontory in the West to Cape Howe in the east, including the offshore islands at the extremities of the region consists mainly of steep rock, sand beaches and rock outcrops. The shoreline is generally one of high sea activity due to the prevailing weather conditions. These areas have varying tidal differences from east to west.

- *Inland Water Shoreline***:** The shoreline of the inland waters in the region which includes Corner Inlet (significant tidal range), the Gippsland Lakes and Mallacoota Inlet (minimal tidal range) are generally of differing ecological type to the ocean shoreline. The shoreline adjacent to these waters consists of sandy beach, salt march mangrove or mudflats. These shores are generally protected from all but the worst weather conditions and therefore have very low sea activity.

The coastline has a considerable number of inlets and river mouths which are generally open to the sea and subject to tidal flow. However, from time to time, one or more of these openings may be closed as a result of natural sand movement. These openings are generally cut through the beach and have beach and sandy shorelines for varying distances on the landward side of the entrance. The openings are subject to fair to strong tidal flow and the strength of the flow will vary from one opening to another as will the distance inland that the tidal flow is discernible.

5.2 REGIONAL CONTEXT

Australia's offshore waters have been divided into six marine regions to facilitate their management by the Australian Government under the EPBC Act. The operational area and the EMBA intersects the South-east Commonwealth Marine Region (SEMR), which extends from the south coast of New South Wales to kangaroo Island in South Australia and around Tasmania.

The SEMR is further regionalised by the Integrated Marine and Coastal Regionalisation of Australia (IMCRA) version 4.0, with the Operational Area located within the Southeast Shelf Transition provincial bioregion within the South-east marine region (DoE, 2015a). This region extends from east of Wilson's Promontory to north of Tathra (NSW) (Figure 5-1). This bioregion is defined based on its distinct and unique habitats and biological communities, structured by a combination of physical, chemical and biological processes. The coastline adjacent to the bioregion is exposed, with long sandy beaches broken by rocky headlands and numerous coastal lagoons.

5.2.1 CLIMATE

The region's climate can be defined as temperate, with moist winters and warm summers. It is influenced by rain bearing cold fronts that move from south-west to north-east across the region, producing strong winds from the

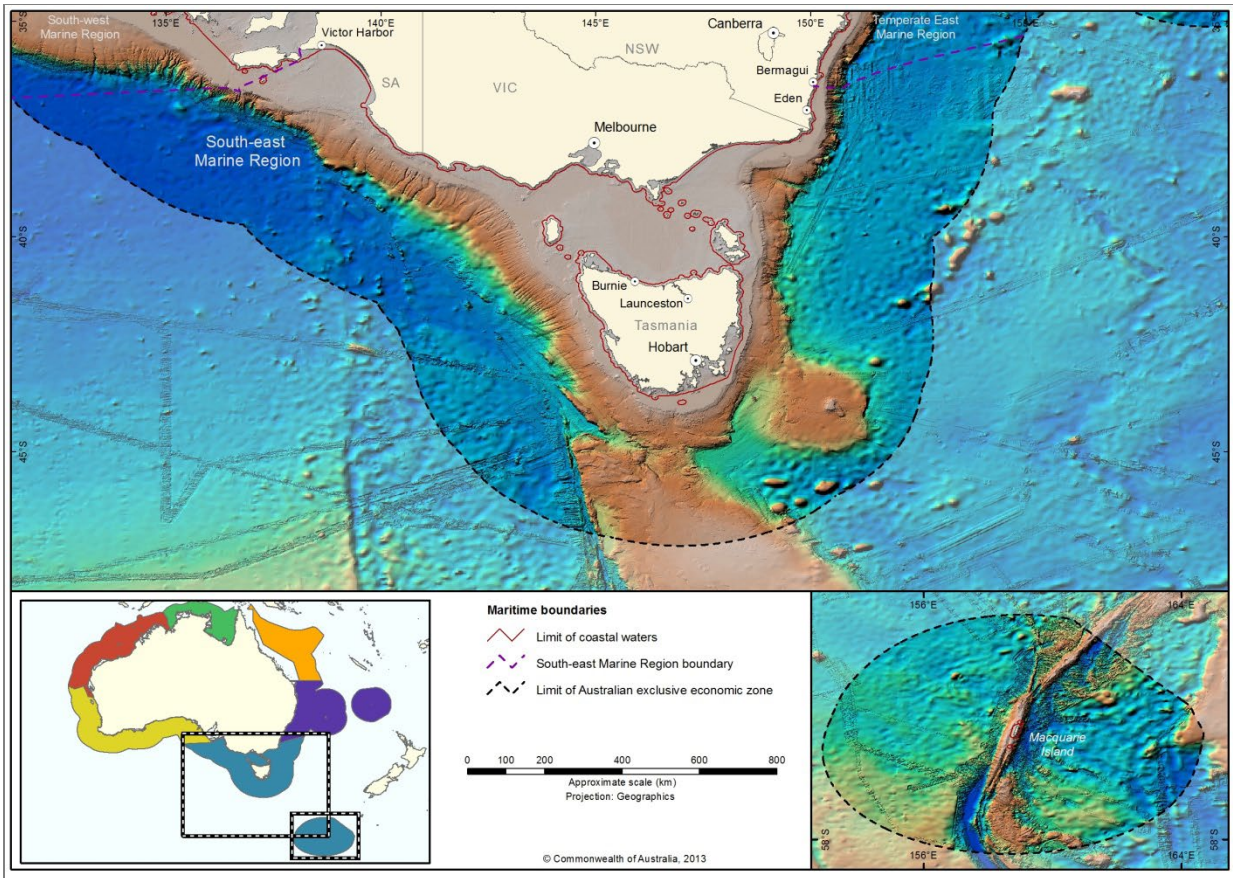
west, north-west and south-west. In winter, when the subtropical ridge moves northwards over the Australian continent, cold fronts generally create sustained west to south-westerly winds and frequent rainfall in the region. In summer, frontal systems are often shallower and occur between two ridges of high pressure, bringing more variable winds and rainfall.

Temperature and Rainfall

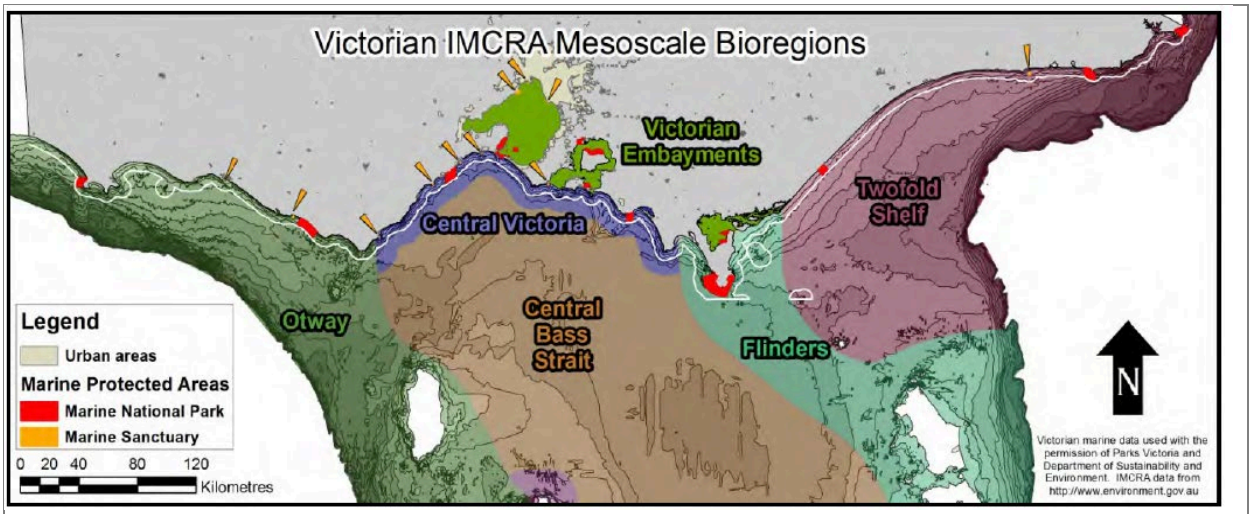
Average monthly air temperatures at Lakes Entrance (49 km northeast of the Operational Area, but the closest coastal town with a Bureau of Meteorology [BoM] weather station) range from 14.6°C in July to 23.8°C in February (1965 to 2006) (BoM, 2017). Mean annual rainfall is 713 mm with the rainfall fairly evenly distributed throughout the year, with a mean minimum of 41.5 mm in February and a maximum of 71 mm in November (BoM, 2017).

Winds

Wind speeds are in the range of 10 to 30 km per hour, with maximum gusts reaching 100 km per hour. The wind direction is predominately westerly during winter, westerly and easterly during spring and autumn (when wind speeds are highest) and easterly during summer. Strong south-easterly winds can be generated by low pressure systems known as 'east coast lows'. Although these occur relatively infrequently (once or twice per year), the longer fetch of these winds increases their potential for generating extreme wave conditions (BOM, 2017).



Source: DoE (2015a).



Source: Barton et al *(2012).*

Figure 5.1: The Southeast Marine region (top) and the Twofold Shelf Victorian bioregion (bottom)

5.2.2 PHYSICAL ENVIRONMENT

Geomorphology

The Operational Area overlaps the seafloor 'slope' geomorphic unit as classified in the South-east Marine Region Profile (DoE, 2015a).

Seabed

Regional

The substrate across Bass Strait comprises a variety of sediment types related to tidal currents, with sediment grain size linked to wave energy. Sediments become progressively finer with increasing distance from the shore, consisting of fine, muddy sands in the mid-shelf regions (Harris and Heap, 2009; Wilson and Poore, 1987). Subtidal soft sediment is recent Holocene sand (<10, 000 years ago) consisting of a mixture of fine and medium sand with some silt, gravelly sand and shell, and with a low carbonate content of 14-19% (Barton et al., 2012). Harris and Heap (2009) also state that that the calcium carbonate content of the sands in the Operational Area is about 10-20%. The carbonate component consists of recognisable skeletal fragments of molluscs, bryozoans and foraminifera (Harris and Heap, 2009).

Local

A geotechnical and geophysical survey was conducted in 2007 prior to the drilling of WSH-3 and Wardie-1 and this data is used to characterise and describe the seabed around the well site. The seabed at WSH-3 and Wardie-1 is relatively flat and featureless on a sandy seabed with localised depressions in water depths of approximately 38 – 40 m (Fugro, 2007). At the time of the survey in 2007, there was no debris evident at the WSH-3 location. The upper most sediments, present from the seabed to approximately 2.5 m below the seabed, consist of Holocene sands and unconsolidated, fine to coarse, occasionally shelly sand with a variable carbonate content (~10-80%) (Holdgate et al., 2003). This, along with the earlier description of regional seabed conditions, indicates that the prevalence of a sandy seabed extends well beyond the Operational Area.

5.2.3 OCEANOGRAPHY

Water Depth

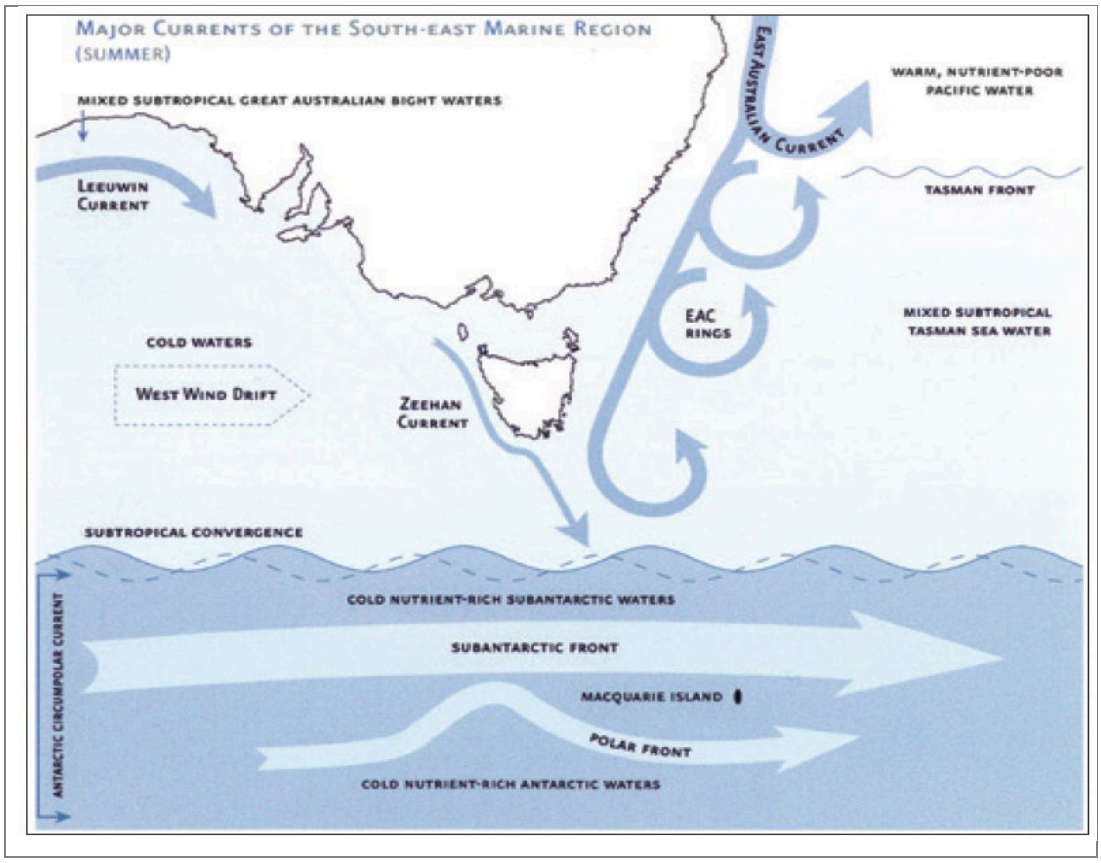
The WSH-3 wellhead is located in water depth of 39.5 m (see Figure 2-1).

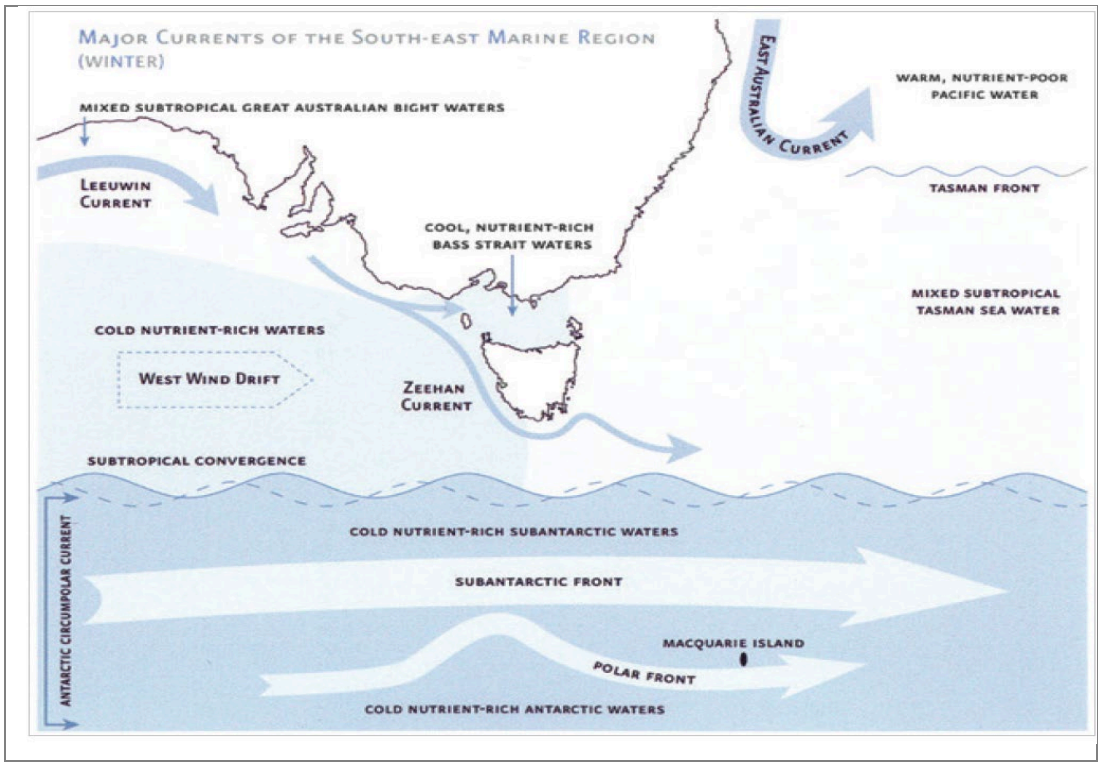
Water Currents

The region is oceanographically complex, with sub-tropical influences from the north and sub-polar influences from the south combined with tides, winds and density driven flows (DoE, 2015a). There is a slow easterly flow of waters in Bass Strait and a large anti-clockwise circulation (DoE, 2015a). Three key water currents influence Bass Strait:

- The Leeuwin Current;
- The East Australian Current (EAC); and
- The Bass Strait Cascade (DoE, 2015a).

Figure 5-2 represents the major ocean currents in south-eastern Australian waters during summer and winter.





Source: DoE (2015a)

Figure 5.2: Major ocean currents in south-eastern Australian waters during summer (top) and winter (bottom)

Sea Temperature

The shallowness of Bass Strait means that its waters more rapidly warm in summer and cool in winter than waters of nearby regions (DoE, 2015a). The sea surface temperatures in the area reflect the influence of warmer waters brought into Bass Strait by the EAC (IMCRA, 1998; Barton et al., 2012). Waters of eastern Bass Strait are generally well mixed, but surface warming sometimes causes weak stratification in calm summer conditions. The average annual sea surface temperature is 16°C.

Salinity

Salinity consistently ranges from 35-36 practical salinity units (psu) throughout the year (based on the World Ocean Atlas database).

Tides

Bass Strait is a relatively shallow area of the continental shelf, connecting the southeast Indian Ocean with the Tasman Sea. Bass Strait has a reputation for high winds and strong tidal currents (DoE, 2015a). Tidal currents run parallel to the coast and follow a semi-diurnal pattern (Barton et al., 2012), with some diurnal inequalities (Jones and Padman, 1983) and speeds generally ranging from 0.1 to 2.5 m/s (Fandry, 1983). However, Barton et al (2012) report that strong tidal currents (2 to 2.5 knots, or 1-1.3 m/s) are characteristic of the area. Tidal variation is 0.9 m for spring tides and 0.6 m for neap tides (Barton et al., 2012).

Waves

Bass Strait is a high-energy environment exposed to frequent storms and significant wave heights (Jones, 1980), though Barton et al (2012) report wave energy in the Twofold Shelf Bioregion as relatively low. Storms may occur several times a month resulting in wave heights of 3 to 4 m or more.

Water Quality

The Regional Outfall Sewer (ROS) has a discharge point at Delray Beach that extends into nearshore waters 23 km shoreward of the operational area. While no data is publicly available regarding the water quality of this release, it is expected to result in increased turbidity and nutrient levels (particularly nitrogen and phosphorous) within a mixing zone around the discharge point.

5.2.4 AMBIENT OCEAN SOUND

Wind is a major contributor to noise between 100 Hz and 30 kHz and can reach 85-95 dB re 1µPa2/Hz under extreme conditions (WDCS, 2004). Rain may produce short periods of high underwater sound with a flat frequency spectrum to levels of 80 dB re 1µPa2/Hz and magnitude 4 earthquakes have been reported to have spectral levels reaching 119 dB re 1µPa2/Hz at frequency ranges of 5-15 Hz. It is noted that earthquakes of this magnitude are relatively frequent along Australia's continental shelf in the southern margin (i.e., tens of small earthquakes per year) (McCauley & Duncan, 2001).

5.3 CONSERVATION VALUES AND SENSITIVITIES

The conservation values and sensitivities in and around the Operational Area are described in this section, with Table 5-3 providing an outline of the conservation categories included.

Table 5-3 Conservation values in the EMBA

Category	Conservation classification	Section
MNES under the EPBC Act	Commonwealth marine areas (principally Australian Marine Parks, AMP)	Section 5.3.1
	World Heritage-listed properties	Section 5.3.2
	National Heritage-listed places	Section 5.3.3
	Wetlands of international importance	Section 5.3.4
	Nationally threatened species and threatened ecological communities	Section 5.3.5, Section 5.5
	Migratory species	Section 5.5
	Commonwealth marine areas	Section 5.5
	Great Barrier Reef Marine Park	Not applicable
	Nuclear actions	Not applicable
	A water resource, in relation to coal seam gas development and large coal mining development	Not applicable
Other areas of national importance	Commonwealth heritage-listed places	Section 5.3.6
	Key Ecological Features (KEF)	Section 5.3.7
	Nationally important wetlands	Section 5.3.8
Victorian protected areas	Marine National Parks and Sanctuaries	Section 5.3.9

5.3.1 AUSTRALIAN MARINE PARKS

The Operational Area does not overlap any AMPs. The EMBA does not overlap any AMPs.

The nearest AMPs are the Beagle AMP and East Gippsland AMP, located 109 km southwest and 214 km east of the Operational Area, respectively (Figure 5-3).

Australian marine parks are recognised under the EPBC Act for protecting and maintaining biological diversity and contributing to a national representative network of marine protected areas. Management plans for Australian marine parks have been developed. Under these plans, Australian marine parks are allocated conservation objectives (International Union for Conservation of Nature (IUCN) Protected Area Category) based on the Australian IUCN reserve management principles in Schedule 8 of the EPBC Regulations 2000.

The current 2013 South-east Commonwealth Marine Reserves Network Management Plan expired on 30 June 2023. Parks Australia is preparing a new management plan for the South-east Network. The South-east Network will be managed under transitional arrangements until a new management plan is finalised.

Oil and gas operations and associated oil spill response may be conducted in a Multiple Use Zone (IUCN VI) subject to the class approval and prescriptions within the South-east Commonwealth Marine Reserves Network Management Plan.

5.3.2 WORLD HERITAGE-LISTED PROPERTIES

World Heritage-Listed properties are examples of sites that represent the best examples of the world's cultural and heritage values, of which Australia has 19 properties (DoEE, 2019a). In Australia, these properties are protected under Chapter 5, Part 15 of the EPBC Act.

No properties on the World Heritage List occur within the Operational Area or the EMBA. The nearest site is the Royal Exhibition Building and Carlton Gardens in Melbourne, an onshore property located 236 km to the northwest of the Operational Area.

5.3.3 NATIONAL HERITAGE-LISTED PLACES

The National Heritage List is Australia's list of natural, historic and Indigenous places of outstanding significance to the nation (DoEE, 2019b). These places are protected under Chapter 5, Part 15 of the EPBC Act.

There are no National Heritage-listed places in Bass Strait, with the nearest places all located onshore (Australian Alps National Parks and Reserves and the Point Nepean Defence Sites and Quarantine Station Area).

The EMBA does not overlap any National Heritage-Listed places.

5.3.4 WETLANDS OF INTERNATIONAL IMPORTANCE

Australia has 66 wetlands of international importance ('Ramsar wetlands') that cover more than 8.3 million hectares (as of September 2019) (DoEE, 2019c). Ramsar wetlands are those that are representative, rare or unique wetlands, or are important for conserving biological diversity, and are included on the List of Wetlands of International Importance developed under the Ramsar Convention. These wetlands are protected under Chapter 5, Part 15 of the EPBC Act.

There are no Ramsar wetlands in the Operational Area, but the EMBA does overlap two Ramsar wetlands. The nearest is the 'Gippsland Lakes' which is located onshore and 14.5 km from the Operational Area at its closest point and 'Corner Inlet' over 120km South-west of the Operational Area.

5.3.5 THREATENED ECOLOGICAL COMMUNITIES

Threatened Ecological Communities (TECs) provide wildlife corridors and/or habitat refuges for many plant and animal species, and listing a TEC provides a form of landscape or systems-level conservation (including threatened species).

The Protected Matters Search Tool (PMST) results indicate that there are no TECs within the Operational Area (DoEE, 2024), but *Giant Kelp Marine Forests of Southeast Australia* lie within the EMBA, which is mapped as occurring at the mouth of the Snowy River 102 km to the north-east. Note that terrestrial areas that are not linked to the shoreline below the high tide mark have been excluded as they are not relevant to consideration of potential affects from marine oil spills.

5.3.6 COMMONWEALTH HERITAGE-LISTED PLACES

Commonwealth Heritage-listed places are natural, indigenous and historic heritage places owned or controlled by the Commonwealth (DoEE, 2019e). In Australia, these properties are protected under Chapter 5, Part 15 of the EPBC Act.

The EMBA overlaps one Commonwealth Heritage-listed place, the Gabo Island Lighthouse in Victoria; though it is not likely to be affected in the event of a spill due to its elevated position on rocky shorelines. The nearest places are the Wilsons Promontory Lighthouse (146 km southwest of the Operational Area) and the Gabo Island Lighthouse (219 km northeast of the Operational Area).

5.3.7 KEY ECOLOGICAL FEATURES

Key Ecological Features (KEFs) are elements of the Commonwealth marine environment that, based on current scientific understanding, are considered to be of regional importance for either the region's biodiversity or ecosystem function and integrity. KEFs have no legal status in decision-making under the EPBC Act but may be considered as part of the Commonwealth marine area (DoEE, 2019f).

The National Conservation Values Atlas indicates that the Operational Area does not intersect any KEFs. The closest KEF is the 'Upwelling East of Eden' with its western most edge located 35 km east of the Operational Area and 'Big horseshoe Canyon' which lies within the Upwelling.

The EMBA overlaps the 'Upwelling East of Eden' KEF. The upwelling supports regionally high primary productivity that supports fisheries and biodiversity, including top order predators, marine mammals and seabirds. This area is one of two feeding areas for blue whales and humpback whales, known to arrive when significant krill aggregations form. The area is also important for seals, other cetaceans, sharks and seabirds.

5.3.8 NATIONALLY IMPORTANT WETLANDS

Nationally important wetlands are considered significant for a variety of reasons, including their importance for maintaining ecological and hydrological roles in wetland systems, providing important habitat for animals at a vulnerable stage in their life cycle, supporting 1% or more of the national population of any native plant or animal taxa or for its outstanding historical or cultural significance (DoEE, 2019g).

There are no nationally important wetlands located within the Operational Area. The nearest is the 'Lake Wellington Wetlands', which occurs 5.4 km inland of the shoreline.

The EMBA overlaps 14 nationally important wetlands, all located in Victoria:

- Bemm, Goolengook, Arte and Errinundra Rivers
- Corner Inlet
- Ewing's Marsh (Morass)
- Jack Smith Lake State Game Reserve
- Lake Bunga
- Lake King Wetlands
- Lake Tyers
- Lake Victoria Wetlands
- Lower Snowy River Wetlands System
- Mallacoota Inlet Wetlands
- Snowy River
- Sydenham Inlet Wetlands
- Tamboon Inlet Wetlands
- Thurra River

5.3.9 VICTORIAN MARINE PROTECTED AREAS

Victoria has 24 marine national parks and sanctuaries that are protected and managed under the *National Parks Act* 1982 (Vic) by Parks Victoria.

There are no marine protected areas located in the Operational Area, but the nearest (being the Ninety Mile Beach Marine National Park (MNP)), 42 km southwest of the Operational Area lies within the EMBA (see Figure 5-3).

Ninety Mile Beach Marine National Park protects part of a unique sandy environment recognised for its internationally significant diversity of marine invertebrates. These tiny invertebrates are a key component of a complex food web which ultimately supports large predators such as the White Shark (Parks Victoria 2006).

5.4 COASTAL ENVIRONMENT

The coastline adjacent to the Operational Area comprises the Ninety Mile Beach, a 90-mile (145 km) long stretch of sandy beach on the seaward side of a narrow, tall, vegetated sand dune system. These sand dunes provide important habitat for hooded plovers and roosting sites for other shorebird species.

Sand is the dominant intertidal substrate of the coastline adjacent to the Operational Area, with intertidal shore platforms intermittently occurring.

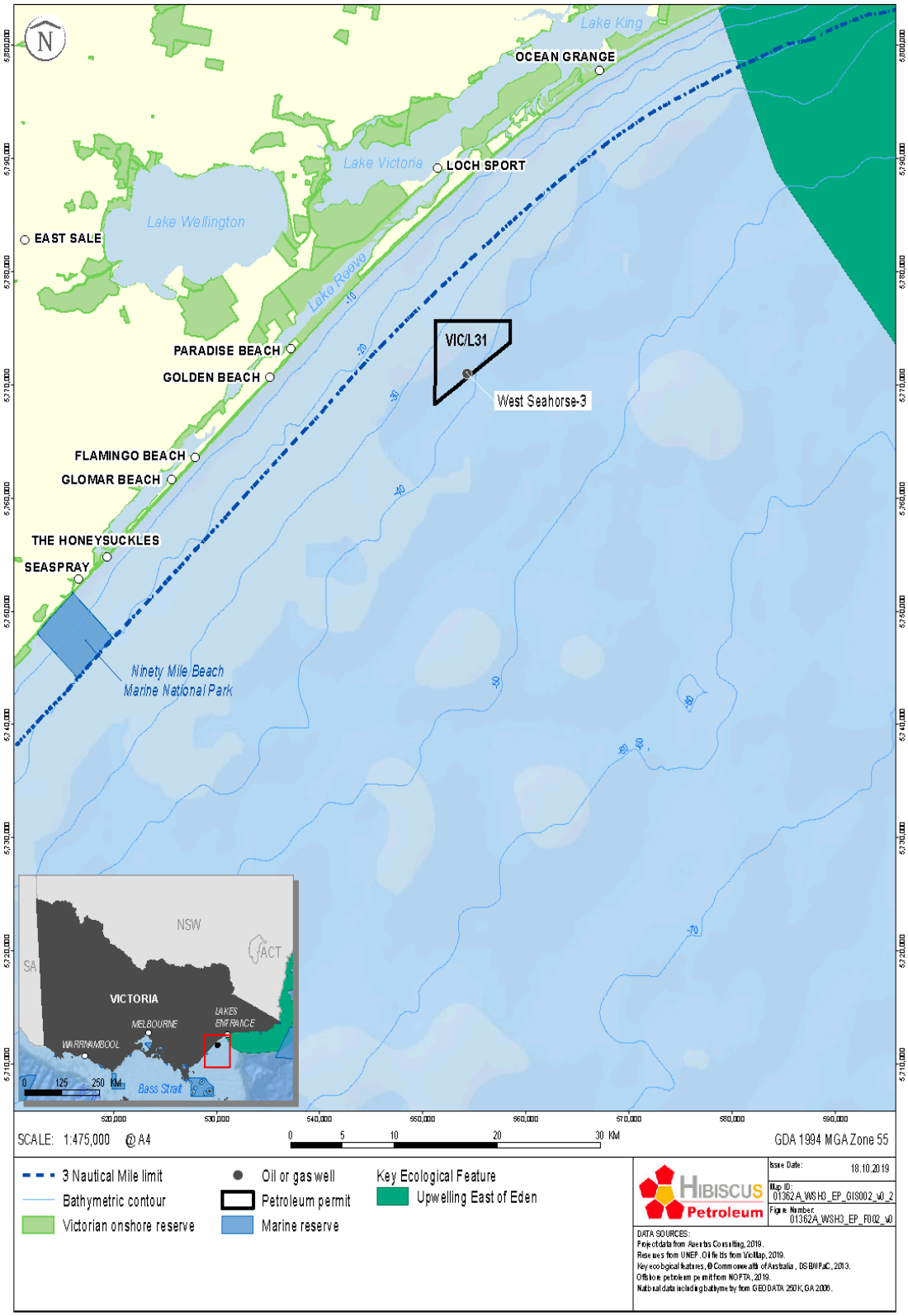


Figure 5.3: Protected areas and KEFs adjacent to the VIC/L31 permit

5.5 BIOLOGICAL ENVIRONMENT

Results of the PMST database search provides the key means by which species and their Biologically Important Areas (BIAs) are identified for the Operational Area and are discussed in this section (DoEE, 2024). A summary of BIAs is provided in Section 5.5.10.

Recent changes to the PMST mean that the updated tool uses a discrete grid system to determine the MNES that might be impacted in an area of interest. Therefore, the PMST returns all the MNES that intersect the same grid cells that are intersected by an area of interest. With marine matters of national environmental significance, a coarser grid resolution is used. This means there is an increased likelihood of "false positives" in marine areas. A false positive will include a species/feature in the PMST report if it is in close proximity to the EMBA, even if there is no actual cross over with the area. Therefore, additional mapping tools are used to confirm the overlap with BIA and species distribution to confirm species presence, those confirmed as being within the EMBA are described in this section.

5.5.1 BENTHIC ASSEMBLAGES

Bass Strait

The seascape of the region is composed of a series of massive sediment flats, interspersed with small patches of reef, bedrock and consolidated sediment (Wilson and Poore, 1987). OSRA mapping for the Ninety Mile Beach indicates that there is an absence of hard substrate or emergent reefs in the region. The sediment flats are generally devoid of emergent fauna but benthic invertebrates such as polychaetes, bivalves, molluscs, crustaceans and echinoderms are present and many species are widely distributed across Bass Strait (Poore et al., 1985; Wilson and Poore, 1987). There are also a number of burrowing species that inhabit the soft seabed, including tubeworms, nematodes, nemerteans and seapens (OMV, 2001).

Parry et al (1989) also found high diversity and patchiness of benthos sampled off Lakes Entrance, where a total of 353 species of infauna was recorded. Crustaceans (53%), polychaetes (32%) and molluscs (9%) dominated sample results.

Barton et al (2012) report that in the Ninety Mile Beach Marine National Park (42 km west-southwest of the Operational Area at its nearest point), reefs are dominated by invertebrates (70% coverage), including sponges, ascidians (sea squirts) and smaller bryozoans (resembling coral) and hydroids (colonies of tiny jellies attached to a feather-like base).

Operational Area

The sandy nature of the seabed around the wellheads is shown in Figure 2-2 and has been described in previous seabed surveys in the vicinity (Fugro, 2007). It is therefore assumed that the Operational Area is consistent with the sandy sediment profile of the broader Gippsland continental shelf described above.

5.5.2 FLORA

Literature searches, combined with Oil Spill Response Atlas (OSRA) mapping, indicate that marine flora, such as seagrasses and kelp, are generally not abundant in the extensive areas of subtidal sand flats in the water depths of the Operational Area. This is likely to be due to the high-energy nature of the Gippsland coastline and the mobile nature of sands, which prevents many species being able to anchor themselves to the seabed. Barton et al (2012) report that in the Ninety Mile Beach MNP (28 km west-southwest of the Operational Area), reefs have sparse floral communities of small red algae. Given the park's proximity, this may be expected to be representative of flora present on rocky reefs near the Operational Area.

5.5.3 PLANKTON

Plankton is a key component in oceanic food chains and comprises two elements; phytoplankton and zooplankton, as described herein.

Phytoplankton (photosynthetic microalgae) comprise 13 divisions of mainly microscopic algae, including diatoms, dinoflagellates, gold-brown flagellates, green flagellates and cyanobacteria and prochlorophytes (McLeay et al., 2003). Phytoplankton drift with the currents, although some species have the ability to migrate short distances through the water column using ciliary hairs.

Zooplankton is the faunal component of plankton, comprising small crustaceans (such as krill) and fish larvae that feed on zooplankton. Zooplankton includes species that drift with the currents and also those that are motile. More than 170 species of zooplankton have been recorded in eastern and central Bass Strait, with copepods making up approximately half of the species encountered (Watson & Chaloupka, 1982).

The CarbonNet Pelican 3D marine seismic survey (which took place in early 2018 and is located 10 km south-west of WSH-3) undertook pre- and post-seismic survey plankton sampling. This found that the composition of zooplankton was a typical healthy example of those expected for temperate coastal waters. Copepods were found to be the dominant group, with varying proportions of appendicularians, cladocerans and doliolids. Numerous other groups occurred in small numbers, including siphonophores, fish larvae, fish eggs, polychaetes, ghost shrimps and cnidarians (jellies) (CarbonNet, 2019).

5.5.4 FISH

There are 32 fish species (26 of which are seahorses and pipefish) recorded in the EPBC Act PMST (DoEE, 2024) as potentially occurring in the Operational Area. There is a Great white shark breeding nursery area BIA that overlaps the Operational Area. There is also a Great white shark foraging BIA that overlaps the EMBA (Figure 5.4).

There are 44 fish species overlapping the EMBA (29 of which are seahorses, seadragons, and pipefish). Listed threatened and migratory species are listed in Table 5.4.

Table 5-4 EPBC Act-listed threatened and migratory fish that may occur in the EMBA

Scientific Name	Common Name	EPBC Act status		Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species				
Freshwater							
Prototroctes maraena	Australian grayling	V	-	Yes	-	-	RP, CA, AS
Galaxiella pusilla	Dwarf galaxias	E	-	-	-	-	RP, CA, AS
Oceanic							
Carcharodon carcharias	Great white shark	V	Yes	Yes	Breeding (nursery area)	Breeding (nursery area), F	RP, AS

Scientific Name	Common Name	EPBC Act status		Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species				
Lamna nasus	Porbeagle shark	-	Yes	Yes	-	-	-
Rhincodon typus	Whale shark	V	Yes	Yes	-	-	CA
Seriolella brama	Blue Warehou	CD	-	Yes	-	-	-
Thunnus maccoyii	Southern Bluefin Tuna	CD	-	-	-	-	AS
Isurus oxyrinchus	Shortfin Mako shark	-	Yes	-	-	-	-
Carcharhinus longimanus	Oceanic Whitetip Shark	-	Yes	-	-	-	-
Galeorhinus galeus	School shark	CD	-	Yes	-	-	-
Centrophorus uyato	Little Gulper Shark	CD	-	-	-	-	-
Centrophorus harrissoni	Harrisson's Dogfish	CD	-	-	-	-	-
Carcharias taurus (east coast population)	Grey Nurse Shark (east coast population)	CE	-	-	-	-	RP, AS
Rexea solandri (eastern Australian population)	Eastern gemfish	CD	-	-	-	-	-
Epinephelus daemelii	Black rockcod	V	-	-	-	-	CA
Listed threatened species:	A native species listed in Section 178 of the *EPBC Act* as either extinct, extinct in the wild, critically endangered, endangered, and vulnerable or conservation dependent.						
Listed migratory species:	A native species that from time to time is included in the appendices to the Bonn Convention and the annexes of JAMBA, CAMBA and ROKAMBA, as listed in Section 209 of the *EPBC Act*.						

Key

EPBC status	V	Vulnerable
	E	Endangered

	CE	Critically endangered
	CD	Conservation Dependent
BIA	A	Aggregation
	D	Distribution (i.e., presence only)
	F	Foraging
	M	Migration
	B	Breeding
Recovery plans	CA	Conservation Advice
(under the EPBC Act 1999)	CMP	Conservation Management Plan
	RP	Recovery Plan
(under the FFG Act 1988)	AS	Action Statement

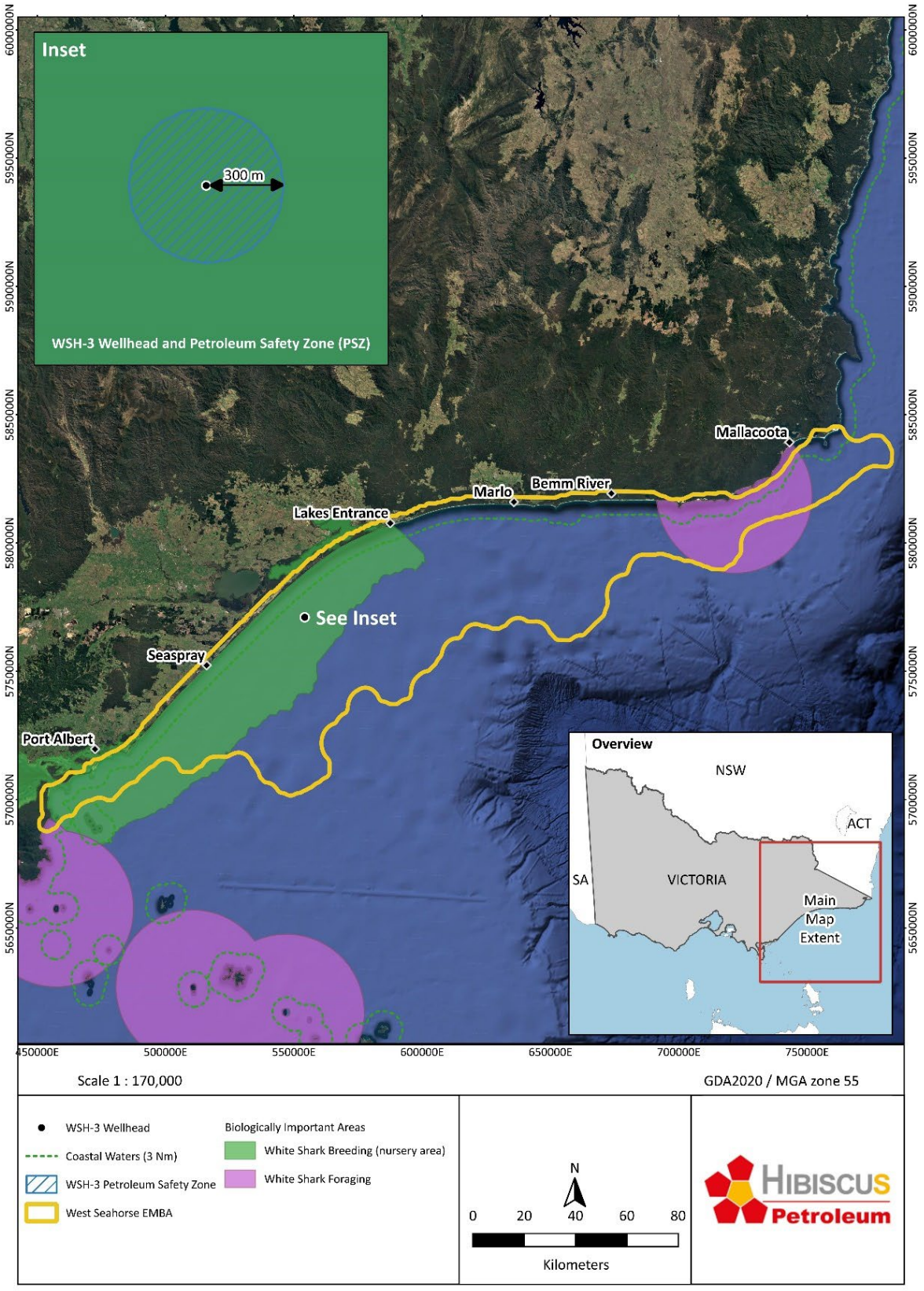


Figure 5.4 Great White Shark reproduction and foraging BIA

Australian grayling (*Prototroctes maraena*) (EPBC Act: Vulnerable, FFG Act: Threatened)

The Australian grayling is a dark brown to olive-green fish attaining 19 cm in length. The species typically inhabits the coastal streams of New South Wales, Victoria and Tasmania, migrating between streams and the ocean (Backhouse et al., 2008; DELWP, 2015). The species spends most of its life in freshwater (DELWP, 2015), and migrates to lower reaches of rivers to spawn typically in autumn (Museums Victoria, 2019).

The Australian Grayling Action Statement (DELWP, 2015) lists several rivers as important locations for the species. None of these rivers are intersected by the Operational Area.

Great white shark (*Carcharodon carcharias*) (EPBC Act: Vulnerable, FFG Act: Threatened)

The great white shark is widely distributed and located throughout temperate and sub-tropical waters, with their known range in Australian waters including all coastal areas except the Northern Territory (DSEWPC, 2013).

Observations of adult sharks are more frequent around fur seal and sea lion colonies, including Wilsons Promontory (approximately 150 km southwest of the Operational Area) and the Skerries (approximately 175 km northeast of the Operational Area) (DSE, 2003).

Juveniles are known to congregate in certain key areas including the Ninety Mile Beach area (including Corner Inlet and Lakes Entrance). A reproduction BIA for the great white shark covers the entire southeast marine region (Figure 5-4) which is within the EMBA.

Given their transitory nature and the proximity of known congregation areas, great white sharks may occur within the Operational Area.

Whale shark (*Rhincodon typus*) (EPBC Act: Vulnerable, listed migratory, Flora and Fauna Guarantee (FFG) Act: Not listed)

The whale shark is the world's largest fish and one of only three filter-feeding shark species (TSSC, 2015a). They have a broad distribution in warm and tropical waters of the world, and in Australia are known only to occur on the west coast of Western Australia, with a feeding aggregation occurring off the Ningaloo Reef between March and July each year (TSSC, 2015a). The species is not known to migrate through Bass Strait, and it is highly unlikely to occur within the Operational Area.

Syngnathids (EPBC Act: Listed marine species, FFG Act: Not listed)

Twenty-seven (29) of the 44 marine ray-finned fish species identified in the EPBC Act PMST are syngnathiformes, which includes seahorses, seadragon, pipehorse and pipefish. The majority of these fish species are associated with seagrass meadows, macroalgal seabed habitats, rocky reefs and sponge gardens located in shallow, inshore waters (e.g., protected coastal bays, harbours and jetties) less than 50 m deep (Museums Victoria, 2019). Figure 2-2 indicates hard substrate is not present around the WSH-3 wellhead. The wellhead itself may provide a hard substrate for colonising species, in turn providing habitat for syngnathids.

Dwarf Galaxias (*Galaxiella pusilla*) (EPBC Act: Endangered)

The eastern dwarf galaxias (*Galaxiella pusilla*) is a tiny, slender, freshwater fish that averages 30-40 mm in length and it's listed as Endangered under the EPBC Act. It has been recorded from southern Victoria, Flinders Island (Bass Strait), north-east Tasmania (Andrews 1976), north-west Tasmania (Chilcott & Humphries 1996), and south-east South Australia (SA) (McDowall 1980a). This species is a generalist carnivore and feeds mostly in the water column on a variety of aquatic invertebrates including insect larvae (Chironomid), small crustaceans (copepods, cladocerans and ostracods) and terrestrial insects that fall into the water (Humphries 1986,

McDowall 1996). The Dwarf Galaxias is thought to be an annual species, where adults die after spawning. Therefore it is vital to have successful recruitment each year, or severe declines in populations will occur, potentially leading to the extinction in certain areas (Humphries 1986, Saddlier et al. 2006).

Blue Warehou (*Seriolella brama*) (EPBC Act: Conservation Dependent)

The blue warehou (*Seriolella brama*) is listed as Conservation Dependent under the EPBC Act. The blue warehou is a medium-sized, deep-bodied fish, reaching a maximum total length of 90 cm and a maximum weight of 7 kg (Bruce et al., 1998; Gomon, 2008; Stobutzki et al., 2011). Globally, it is confined to Australian and New Zealand waters (Kaschner et al., 2010), within the Australian Exclusive Economic Zone, the species occurs predominantly in coastal shelf, upper continental slope and seamount waters offshore from New South Wales, Tasmania, Victoria and South Australia (Bruce et al., 1998; Gomon, 2008). The blue warehou is taken in commercial fisheries working in southern Australian waters and, currently, it is caught as incidental byproduct in the Southern and Eastern Scalefish and Shark Fishery, which is managed by the Commonwealth statutory authority – the Australian Fisheries Management Authority. (Woodhams and Vieira, 2012).

Southern Bluefin Tuna (*Thunnus maccoyii*) (EPBC Act: Conservation Dependent)

The Southern bluefin tuna (*Thunnus maccoyii*) is listed as Conservation Dependent under the EPBC Act. It is a long and muscular fish, growing up to 225cm in length and 200kg in weight (Carpenter & Niem 2001; Phillips et al. 2009). This species is found in the south-west and south-east Atlantic Ocean, eastern and western Indian Ocean and the south-west Pacific Ocean (IUCN 2010). In Australia, its distribution ranges widely from northern Western Australia (WA) to the southern region of the continent, including Tasmania, and to northern New South Wales, appearing in eastern Australian waters mainly during winter (Caton 1991; CCSBT 2009; Honda et al. 2010; NSW DPI FSC n.d.). Juveniles of one to two years of age inhabit inshore waters in WA and South Australia (Honda et al. 2010). Commerically, this species is one of the most highly valued fish on the market. Commercial fishing has become a major threat to the southern bluefin tuna (TSSC 2010aw), creating a severe reduction in numbers as a result of heavy fishing pressure throughout its range.

Harrisson's dogfish (*Centrophorus harrissoni*) (EPBC Act: Conservation Dependent)

Harrisson's dogfish (*Centrophorus harrissoni*) is listed as conservation dependent under the EPBC Act. The species relatively small, growing to a maximum length of 114 cm. This species distribution ranges from north of Evans Head in New South Wales, through waters off the coast of Victoria, to Cape Hauy (Tasman Peninsula) in Tasmania. The main threat to Harrisson's dogfish in Australian waters is past fishing pressure in both state and Commonwealth-managed commercial fisheries operating on the upper-slope (Wilson et al., 2009; AFMA, 2010a).

Eastern gemfish (*Rexea solandri*) (EPBC Act: Conservation Dependent)

The Eastern gemfish (*Rexea solandri)* is listed as conservation dependent under the EPBC Act. This species is a long, slender and silvery fish. They can reach a maximum weight of 15 kg, although they are typically substantially smaller than that (Morison et al. 2007; Tilzey 2000a cited in Pogonoski et al. 2002). Gemfish are found throughout southern Australian temperate waters (Pogonoski et al. 2002). In Australia, gemfish are divided into two stocks: Eastern Gemfish, which are distributed from Cape Moreton, southern Queensland, along the east coast to Bass Strait and the waters off Tasmania; and western Australian stock, which are distributed from Ningaloo Reef and Geraldton through the Great Australian Bight (Colgan & Paxton 1997). The Eastern Gemfish is considered to be historically overfished, although it is uncertain whether overfishing is still continuing (Morison et al. 2007).

Black Rockcod (*Epinephelus daemelii*) (EPBC Act: Vulnerable)

The Black rockcod (*Epinephelus daemelii*) is listed as vulnerable under the EPBC Act. This species range includes warm temperate and subtropical waters of the southwestern Pacific, including southeastern Australia and the North Island, Kermadec Islands and Poor Knights Islands of New Zealand. It generally inhabits near-shore rocky and offshore coral reefs at depths down to 50 m. In coastal waters juveniles are often found in estuary systems with adults moving into rock caves, rock gutters and on rock reefs (DoEE, 2012a). Current identified threats to the black cod are incidental by-catch by recreational and commercial fishers and illegal fishing activities.

Porbeagle Shark (*Lamna nasus*) (EPBC Act: Listed migratory)

The Porbeagle shark (*Lamna nasus*) is listed as migratory under the EPBC Act. The Porbeagle is a stout-bodied, thermo-regulating shark that grows to more than 200 cm long and up to 230 kg. The Porbeagle is wide-ranging and inhabits temperate, subarctic and subantarctic waters of the North Atlantic and Southern Hemisphere (Francis et al. 2002). In Australia, the species occurs in waters from southern Queensland to south-west Australia (Last & Stevens 2009). Animals typically occur in oceanic waters off the continental shelf, although they occasionally enter coastal waters (Francis et al. 2002). The Porbeagle is known to be particularly vulnerable to overfishing. The fins and meat of the species are highly valued and there have been documented rapid Porbeagle fishery collapses in the past (Francis et al. 2002). The estimated low abundance of the species, slow growth rate, late age at maturation and low fecundity indicate that sustainable yields of this species would be low (Francis et al. 2002, 2007). Although most fisheries are now closed or highly regulated, the Porbeagle is still taken as bycatch in longline fisheries targeting other species (Francis et al. 2002).

Shortfin Mako Shark (*Isurus oxyrinchus*) (EPBC Act: Listed migratory)

The Shortfin mako shark (*Isurus oxyrinchus*) is listed as migratory under the EPBC Act. It is a large pelagic shark, able to grow up to 4 metres in length. This species has been recorded in offshore waters all around the Australian coastline except for the Arafura Sea, Gulf of Carpentaria and Torres Strait in the north (TSSC, 2014b). It is a pelagic species, primarily occurring in offshore, oceanic waters (Last and Stevens, 2009). The shortfin mako is highly migratory and can cover large distances, migrating from Australian waters to areas well beyond the Australian Exclusive Economic Zone (Rogers et al., 2009). Globally, the main threat to the shortfin mako is historic and ongoing fishing pressure (Cailliet et al., 2004).

Oceanic Whitetip Shark (*Carcharhinus longimanus*) (EPBC Act: Listed migratory)

The Oceanic whitetip shark (*Carcharhinus longimanus*) is listed as migratory under the EPBC Act. The shark spends most of its time in the upper layer of the ocean—to a depth of 150 and prefers off-shore, deep-ocean areas. During summer, when the water surface is warmer, oceanic whitetips tend to swim more quickly and at deeper depths. The oceanic whitetip is typically solitary, though gatherings have been observed where food is plentiful. It swims during the day and night.

School Shark (*Galeorhinus galeus*) (EPBC Act: Conservation Dependent)

The school shark (*Galeorhinus galeus*) is listed as conservation dependent under the EPBC Act. This species is a moderately slender, bronze-grey shark that can grow up to 175cm long (Last & Stevens 1994). The School Shark occurs throughout the temperate coastal waters of southern Australia. They are found from Moreton Bay, in southern Queensland, to Perth, Western Australia, including offshore waters of Lord Howe Island and Tasmania (Pogonoski et al. 2002). The School Shark moves extensively throughout the waters of southern Australia (TSSC 2009b). This species is mainly found in demersal waters, over the continental and insular shelves, but also over the upper slopes, in depths from near shore to 550 m (Last & Stevens 1994). Inshore areas are particularly important as birthing and nursery sites (TSSC 2009b). The main threat identified for the school shark is fishing pressure. It is commercially fished and is primarily caught in the Gillnet, Hook and Trap

(GHAT) sector of the Southern and Eastern Scalefish and Shark Fishery (SESSF); however, the species is also caught in fisheries of Western Australia and the eastern states.

Little Gulper Shark (*Centrophorus uyato*) (EPBC Act: Conservation Dependent)

The Little gulper shark or Southern dogfish (*Centrophorus uyato*) is listed as conservation dependent under the EPBC Act. Southern dogfish are small, deepwater sharks that are uniformly light greyish-brown in colour, which may be darker along the dorsal surface and paler on the belly. The species grows to a maximum length of 112 cm (Daley et al., 2002; Last and Stevens, 2009). Southern dogfish are endemic to Australia in habitats on the upper-slope between 180 m to 900 m (Williams et al., 2012) of the southern continental shelf. Williams et al. (2012) identified southern dogfish to have a core range off the east coast of Australia from south of Newcastle off New South Wales to Banks Strait Gullies off the north-eastern corner of Tasmania. It occurs off the southern Australian coast from near Warrnambool to south of Ceduna and from the western side of the Great Australian Bight up the west coast to approximately Mandurah south of Perth, but is apparently absent between these two expanses off the South Australian coast in the Ceduna Terraces as well as off southern Tasmania through Bass Strait. The main threat to southern dogfish in Australian waters was population reduction caused by past fishing pressure in both state and Commonwealth-managed commercial fisheries operating on the upper-slope (Wilson et al., 2009; AFMA, 2010a).

Grey Nurse Shark (East coast population) (*Carcharias taurus*) (EPBC Act: Critically Endangered)

The Grey nurse shark (East coast population) (*Carcharias taurus*) is listed as critically endangered under the EPBC Act. The species has a large, rather stout body and is coloured grey to grey-brown dorsally, with a paler off-white underbelly (Last & Stevens 1994), and can grow to at least 360 cm in length (Last & Stevens 1994). The Grey Nurse Shark (east coast population) has been regularly reported from southern Queensland and around south-east Australia, although the species is uncommon in Victorian, South Australian and Tasmanian waters, and has not been found in the Great Australian Bight. The Grey Nurse Shark (east coast population) has been recorded as far north as Cairns (Pogonoski et al. 2002; Stevens 1999). However, more recently Grey Nurse Shark distribution in Australia has generally been confined to coastal waters off southern Queensland and along the entire NSW coast (Environment Australia 2002a). The species may be a rare vagrant in the northern section of the Commonwealth south-east marine bioregion. Although currently protected in most states, Grey Nurse Sharks have been fished commercially in the past. However, in spite of legislative protection, Grey Nurse Sharks are still under threat from incidental catch in some commercial fisheries.

5.5.5 CRUSTACEANS

There are 2 crustacean species recorded in the EPBC Act PMST (DoEE, 2024) as potentially occurring in the EMBA and listed as threatened (Table 5.5).

Table 5-5 EPBC Act-listed threatened crustaceans that may occur in the EMBA

Scientific Name	Common Name	EPBC Act status		Present in OA?	BIA within the OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species				
Freshwater							
Euastacus bidawalus	East Gippsland spiny crayfish	E	-	-	-	-	CA

Scientific Name	Common Name	EPBC Act status		Present in OA?	BIA within the OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species				
Euastacus diversus	*Orbost Spiny Crayfish*	E	-	-	-	-	CA, AS

(under the EPBC Act 1999)	CMP	Conservation Management Plan
	RP	Recovery Plan
	CA	Conservation Advice
(under the FFG Act 1988)	AS	Action Statement

East Gippsland spiny crayfish (*Euastacus bidawalus*) (EPBC Act: Endangered, FFG Act: Vulnerable)

The East Gippsland spiny crayfish (*Euastacus bidawalus*) is listed as endangered under the EPBC Act. This crayfish has a maximum recorded occipital carapace length (size) (OCL, Morgan 1997) of ~53 mm (McCormack 2021). The species is endemic to eastern Victoria and south-eastern New South Wales (NSW) (Morgan 1986), and is found in Bondi State Forest, and Coopracambra, Croajingolong, Alfred and Lind national parks (Morgan 1986). Established threats (habitat destruction, pollution, invasive species, and human exploitation), emerging threats (climate change), and potential future threats (disease such as *Aphanomyces astaci* [crayfish plague]; Panteleit et al. 2017; DAWE 2019) may put many species of Euastacus at serious risk of population declines, or extinction, in less than a decade (Wells et al. 1983; Coughran 2007; Coughran & Furse 2010; Furse & Coughran 2011b; Furse 2014; Richman et al. 2015). Most of the key threats to this species are associated with climate change.

Orbost spiny crayfish (*Euastus diverscus*) (EPBC Act: Endangered, FFG Act: Endangered)

The Orbost spiny crayfish (*Euastacus diversus)* is listed as endangered under the EPBC Act. The Orbost spiny crayfish is in the spinose group of Euastacus species (Coughran 2008) and has a maximum recorded occipital carapace length (OCL, Morgan 1997) of 44.5 mm (Coughran et al. 2015). The Orbost spiny crayfish is endemic to East Gippsland (Victoria), where it is found in the mid and upper Brodribb River system, the upper tributaries of the Bonang River system, and the upper tributaries of the Rodger and Yalmy rivers (Coughran et al. 2015). Its distribution overlaps with the Errinundra and Snowy River national parks, and the Gap Scenic Reserve. It is found at elevations from 350–950 m above sea level. Established threats (habitat destruction, bushfires, exotic species, drought, and overcollection), emerging threats (climate change), and potential future threats (disease such as *Aphanomyces astaci* [crayfish plague]; Panteleit et al. 2017; DAWE 2019) may put many species of Euastacus at serious risk of population declines, or extinction, in less than a decade (Wells et al. 1983; Coughran 2007; Furse & Coughran 2011b; Furse 2014, Coughran et al. 2015; Richman et al. 2015).

5.5.6 CETACEANS

The PMST (DoEE, 2024) indicates that five whale species and five dolphin species may reside within or migrate through the Operational Area.

There are 10 cetacean species overlapping the EMBA, two of those are listed as vulnerable and migratory (Sei whale and Fin whale), two are endangered and migratory (Pygmy Blue whale and Southern right whale) and an additional 6 species are migratory. Cetaceans listed as threatened or migratory are provided in Table 5.6.

A Pygmy blue whale foraging BIA and a southern right whale migration BIA overlaps the Operational Area (Figure 5.5 and Figure 5.7) and a breeding BIA for Indo-Pacific/ spotted bottlenose dolphin overlaps the EMBA slightly (Figure 5.8). There is also a reproduction BIA that overlaps the EMBA for Southern right whales (Figure 5.7).

Table 5-6 EPBC Act-listed cetaceans that may occur in the EMBA

Scientific Name	Common Name	EPBC Act status		FFG Act status	Present in the OA?	BIA within the OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species					
Whales								
Balaenoptera borealis	Sei whale	V	Yes	-	-	-	-	CA
Balaenoptera musculus	Pygmy Blue whale	E	Yes	E	Yes	F	F	CMP, AS
Balaenoptera physalus	Fin whale	V	Yes	-	-	-	-	CA
Caperea marginata	Pygmy right whale	-	Yes	-	Yes	-	-	-
Eubalaena australis	Southern right whale	E	Yes	E	Yes	M	B M	RP, AS
Megaptera novaeangliae	Humpback whale		Yes	-	Yes	-	-	AS
Physeter macrocephalus	Sperm Whale	-	Yes	-	-	-	-	-
Balaenoptera edeni	Bryde's Whale	-	Yes	-	-	-	-	-
Dolphins								
Lagenorhynchus obscurus	Dusky dolphin	-	Yes	-	Yes	-	-	-
Orcinus orca	Killer Whale	-	Yes	-	Yes	-	-	-
Tursiops aduncus[1]	Indo-pacific/ Spotted Bottlenose dolphin	-	-	-	-	B	B	-

*Refer to Table 5-4 for key and definitions.

1 *Tursiops aduncus* is not listed under the EPBC Act as a threated or migratory species but there is a breeding BIA that just overlaps the north eastern corner of the EMBA and deemed relevant to include in the above table.

A description of species below focuses on the threatened species listed in Table 5.7 and those with BIAs.

Pygmy Blue whale (*Balaenoptera musculus*) (EPBC Act: Endangered, listed migratory, FFG Act: Threatened)

Blue whales are the largest living animals on earth, growing to a length of over 30 m, weighing up to 180 tonnes and living up to 90 years (DoE, 2015b). There are two subspecies of blue whales that use Australian waters (including Australian Antarctic waters), the pygmy blue whale (*B. m. brevicauda*) and the Antarctic blue whale (*B. m. intermedia*) (DoE, 2015b). The DoE (2015b) recognises three overlapping Australian populations that are likely to occur and overlap in Bass Strait in south east Australia being:

- Antarctic blue whale population – all those Antarctic blue whales occupying or passing through Australian waters;
- Indo-Australian pygmy blue whale – all those pygmy blue whales occupying or passing through waters from Indonesia to western and southern Australia; and
- Tasman-Pacific pygmy blue whale – all those putative pygmy blue whales occupying or passing through waters in southeast Australia and the Pacific Ocean.

Off Western Australia, the Antarctic subspecies (*B. m. intermedia*) has been acoustically detected off Cape Leeuwin from May to November, and the Perth Canyon from May to October, and off the west and north coasts of Tasmania predominately from May to December. Based on the seasonality of recordings, these areas possibly form part of their migratory route, breeding habitat or a combination of the two (DoE, 2015b).
The pygmy blue whale (*B. musculus. brevicauda*) inhabits Australian waters as far north as Scott Reef, the Kimberley region, and west of the Pilbara, as far south as south-west Australia, across to the Great Australian Bight and the Bonney Upwelling, and to waters as far east as off Tasmania. This sub-species migrates through Bass Strait and it is found in waters north of 55°S (DoE, 2015b). They have known feeding grounds in adjacent waters off Victoria, South Australia and Tasmania (DoE, 2015b). Blue whales are a highly mobile species that feed on krill (euphausids*, Nyctiphane australis*).

A BIA for 'foraging' for the pygmy blue whale covers most of Bass Strait, including the Operational Area, with known foraging areas (Figure 5.5) (abundant food source/annual high use area) occurring off the southwest Victorian coast (Figure 5.7). Pygmy blue whales may pass through the Operational Area.

Pygmy right whale (*Caperea marginata*) (EPBC Act: Listed migratory, FFG Act: Not listed)

Pygmy right whales are a little-studied baleen whale species found in temperate and sub-Antarctic waters in oceanic and inshore locations. There are few confirmed sightings of pygmy right whales at sea (Reilly et al., 2008), with few or no records from eastern Victoria and no population estimates available for Australian waters (Kemper 2002a). The largest reported group sighted (100+) occurred near Portland in June 2007 (Gill et al., 2008).

Based upon the lack of sightings off eastern Victoria, the absence of a BIA in Australian waters and the nearshore location of the Operational Area, it is considered unlikely that this species occurs within the Operational Area.

Southern right whale (*Eubalaena australis*) (EPBC Act: Endangered, listed migratory, FFG Act: Threatened)

Southern right whales are medium to large black (or less commonly grey-brown) baleen whales. They are recognisable by the lack of a dorsal fin, rotund body shape, and whitish callosities (patches of keratinised skin colonised by cyamids - small crustaceans) on the head. They reach a maximum length of approximately 16 m and a weight of around 40 tonnes, with mature females slightly larger than males (DCCEEW, 2024).

Southern right whales occur seasonally in all state coastal waters, with sightings ranging from Hervey Bay in Queensland on the east coast, along the entire southern coastline and including Tasmania, to Exmouth Gulf in Western Australia (Smith et al. 2024). There are two populations that occur along the Australian coast: the

western and eastern populations. This delineation of populations is based on genetic differentiation (Carroll et al. 2011, Carroll et al. 2015).
The southern right whale is typically distributed between 20°S and 65°S in the southern hemisphere and in Australian waters predominantly occur in aggregations in coastal water reproductive areas where they calve and nurse their young from May to October, primarily occupying shallow waters (< 10m depth) within 1 km of the coastline (Charlton et al. 2019, Smith et al. 2022). Aggregation areas are well known, with the largest located in Western Australia and South Australia. In Victoria, there is a regular aggregation area in waters off Warrnambool at Logans Beach and increasing numbers of sightings along the Gippsland coast (east from Wilsons Promontory), and relatively regular sightings along the southeast coast of Tasmania (Stamation et al. 2020, Watson et al. 2021) The southern right whale has a defined reproduction (May to September) BIA that occurs close to the shore along the entire Victorian coastline (Figure 5.8) that is approximately 10km from the Operational Area. A migration (April to October) BIA also overlaps the Operational Area and EMBA for the southern right whale.

Humpback whale (*Megaptera novaeangliae*) (EPBC Act: Listed migratory, FFG Act: Not listed)

The humpback whale is a moderately large (15-18 m long) baleen whale that has a worldwide distribution but geographic segregation. Humpback whales are found in Australian offshore and Antarctic waters. They primarily feed on krill in Antarctic waters south of 55°S. The eastern Australian population of humpback whales is referred to as Group E1 by the International Whaling Commission, one of seven distinct breeding stocks in the southern hemisphere (TSSC, 2015b).

Bass Strait represents part of the core range of the E1 Group, but feeding, resting or calving is not known to occur in Bass Strait (TSSC, 2015b), though migration through Bass Strait may occur (Figure 5.6). The nearest area that humpback whales are known to congregate (forage) is at the southern-most part of NSW (near the eastern border of Victoria), approximately 221 km northeast of the Operational Area. Twofold Bay (Eden) off the NSW south coast is the nearest known feeding area (a BIA) for humpback whales, located 240 km northeast of the Operational Area.

As the Operational Area represents a core range for humpback whales, there is a likelihood that they may be present, particularly during April, May, November and December, though this likelihood is considered low due to their preference for migrating along the edge of the continental shelf.

Sperm Whale (*Physeter macrocephalus*) (EPBC Act: Listed migratory)

The Sperm whale (*Physeter macrocephalus*) is listed as migratory under the EPBC Act. They are the largest of the odontocetes (toothed whales) and the most sexually dimorphic cetaceans, with males considerably larger than females (Whitehead 2002a). Adult Sperm Whale females may grow to lengths of 11 m and weigh 15 tonnes, while adult males reach about 16 m and may weigh as much as 45 tonnes (Rice 1989). Sperm Whales have been recorded from all Australian states (Bannister et al. 1996). Females and young male Sperm Whales are restricted to warmer waters, generally north of approximately 45° S, while older males travel to and from colder waters and to the edge of the Antarctic pack-ice. Sperm Whales have concentrated in a narrow area only a few miles wide at shelf edge off Albany, Western Australia, moving westwards through the year (Bannister et al. 1996). Off the Western Australian coast, where the continental shelf slopes less steeply, Sperm Whales appear to be less concentrated close to shelf edge and more widely dispersed offshore (Bannister et al. 1996). Similar concentrations of Sperm Whales have been found elsewhere in Australia, such as south-west of Kangaroo Island, South Australia. Current threats to Sperm Whales primarily include collision with large vessels on shipping lanes beyond the edge of the continental shelf, seismic operations in similar areas causing evasive responses, entrapment in fishing gear (including 'ghost nets'), and illegal whaling or a resumption of legal commercial whaling. Pollution, including increasing amounts of plastic debris at sea, oil spills and dumping of industrial wastes into waterways and the sea, leading to bio-accumulation of toxic substances in body tissues is an unquantified threat to Sperm Whales (Reeves et al. 2003).

Sei Whale (*Balaenoptera borealis*) (EPBC Act: Vulnerable, listed migratory)

The Sei whale (*Balaenoptera borealis*) is listed as vulnerable and migratory under the EPBC Act. They are dark grey or blue-grey on their back and sides. They are approximately 12–16 m long, although they can reach lengths of 17.7 m in males and 21 m in females (Gambell 1985). Adult females are about 0.5–0.6 m longer than males, and sei whales of the Southern Hemisphere are larger than those of the Northern Hemisphere (Horwood 1987). Sei whales have been infrequently recorded in Australian waters (Bannister et al. 1996). The similarity in appearance of sei whales and Bryde's whales (*Balaenoptera edeni*) has resulted in confusion about distributional limits and frequency of occurrence, particularly in warmer waters (>20 °C) where Bryde's whales are more common. Sei whales were thought to be the most common whales reported by whalers off Albany, Western Australia while hunting sperm whales (*Physeter macrocephalus*), however, these may have been misidentified Bryde's whales (Bannister et al. 1996). There are several reports of presumed sei whale sightings by fishermen around the shelf edge (50 km offshore) off the coast of NSW. A trawled carcass of a sei whale was reported within 300 km of the Northern Territory coast (Chatto & Warneke 2000). There is one record of a sei whale stranding for Tasmania in 1963 (Warneke 2004, pers. comm. in DCCEEW 2016) and another stranding of a sei whale in Tasmania in 1980 (McManus et al. 1984). Sei whales have been sighted 20–60 km offshore on the continental shelf in the Bonney Upwelling (Miller et al. 2012) where opportunistic feeding has been observed between November and May (Gill et al. 2015). Sei whales were reported 200 nautical miles (nm) south-west of Port Lincoln in December 1995 and a concentration of sei whales was reported at the western end of Bass Strait (Kato et al. 1996). Surveys passing through Commonwealth waters during the 2001–02 and 2002–03 International Whaling Commission (IWC) Southern Ocean Whale and Ecosystem Research (SOWER) cruises found a small number of sei whales, including cows with calves, about 40 km south of Hobart, Tasmania (Ensor et al. 2002). Seven sei whales were seen apparently feeding about 65 km south of Tasmania in January 1993, and a sei whale was seen close inshore off the Tasman Peninsula, south-east Tasmania, in June 1996 (Gill 2004, pers. comm. in DCCEEW 2016). Sei whales are also found in waters off Australia's Antarctic Territory. Current threats to this species includes anthropogenic noise and acoustic disturbance, habitat degradation, pollution, vessel strike, prey depletion due to fisheries, and resumption of commercial whaling (potential threat).

Bryde's Whale (*Balaenoptera edeni*) (EPBC Act: Listed migratory)

Bryde's whale (*Balaenoptera edeni*) is listed as migratory under the EPBC Act. Female Bryde's Whales are larger than males throughout life, the difference reaching about 0.5–0.6 m at full maturity (Kato 2002). Rice (1998) describes the "small form" Bryde's Whale (*B. edeni*) as reaching physical maturity at nine m and rarely growing longer than about 11.5 m. In contrast, Rice (1998) states that the "ordinary" Bryde's Whale (*B. brydei*) does not even reach sexual maturity until 11.2 m (males) or 11.7 m (females) and can grow to 14.6 m (males) or 15.6 m (females). The average weight for the inshore form of Bryde's Whale off South Africa was estimated as 10.77 tonnes (Best et al. 1984). Bryde's Whales have been recorded from all Australian states except the Northern Territory (Bannister et al. 1996). The current extent of occurrence for Bryde's Whales is estimated to be greater than 20 000 km² (based on the Australian Economic Exclusion Zone (200 nautical mile (nm), down to about 40° S) (Peddemors & Harcourt 2006, pers. comm.). Overall the Bryde's Whale is considered to be neither in danger nor at depleted levels (Martin 1990). Some current and future threats to this species includes pollution, direct disturbance possibly from seismic and/or defence operations, collisions with large vessels, and entanglement in fishing gear (Bannister et al. 1996). In addition, competition with commercial fisheries, particularly species such as anchovy, may also affect these animals (Bannister et al. 1996).

Fin Whale (*Balaenoptera physalus*) (EPBC Act: Vulnerable, listed migratory)

The fin whale (*Balaenoptera physalus*) is listed as vulnerable and migratory under the EPBC Act. Adult fin whales range between 20 and 27 m long and weigh more than 70 tonnes. As with other baleen whales, female fin whales grow to a larger size than males (Aguilar & Lockyer 1987). This species has been observed during aerial surveys in South Australian waters between November and May (Gill et al. 2015), however, fin whale distribution in

Australian waters is known primarily from stranding events and whaling records. Fin whale strandings have been reported in small numbers from Western Australia, South Australia, Victoria and Tasmania (Bannister et al. 1996). Current threats to fin whales primarily include anthropogenic noise and acoustic disturbance, habitat degradation, pollution, entanglement and bycatch, vessel strike, resource depletion due to fisheries, and resumption of commercial whaling (potential threat).

Southern Right Whale Dolphin (*Lissodelphis peronii*) (EPBC Act: Listed cetacean)

The southern right whale dolphin (*Lissodelphis peronii*) is listed as a cetacean under the EPBC Act. The maximum weight for this species is 116 kg, with maximum lengths reaching 2.97 m in males and 2.3 m in females. Group size ranges from 1–1000, with an average group size of 52 animals. Southern Right Whale Dolphins are found off southern continental Australia. They have stranded in Tasmania, plus several sightings have been made south and south-westward of Tasmania, in the Great Australian Bight and off south-western Australia (Bannister et al. 1996). Southern Right Whale Dolphins have not been recorded from either Heard Island or Macquarie Island. Although no key localities are known in Australian waters (Bannister et al. 1996), greater survey effort could potentially find key localities similar to that off the west coast of Namibia where Southern Right Whale Dolphins appear to have a year-round occurrence in a localised area associated with the Lüderitz upwelling cell area. The current area of occupancy of Southern Right Whale Dolphins cannot be calculated due to the sparsity of sighting records for a large proportion of the range. However it is likely to be greater than 2000 km² (Peddemors & Harcourt 2006, pers. comm.). Past and current threats to the Southern Right Whale Dolphin population identified by Bannister et al (1996) include sporadic catches by whalers (for meat) in the nineteenth century but never a directed fishery, incidental catches in Chilean gill-net fisheries, entanglement in drift-nets set outside Australian Territorial Waters and in lost or discarded netting, and reported hooked by line fishing, but no information for Australian waters. In addition, the species is prone to entanglement in gill-nets and therefore potentially threatened by gill-netting operations occurring within their distribution in the Australian region. leading to bio-accumulation of toxic substances in body tissues has also been identified as a potential threat (Bannister et al. 1996).

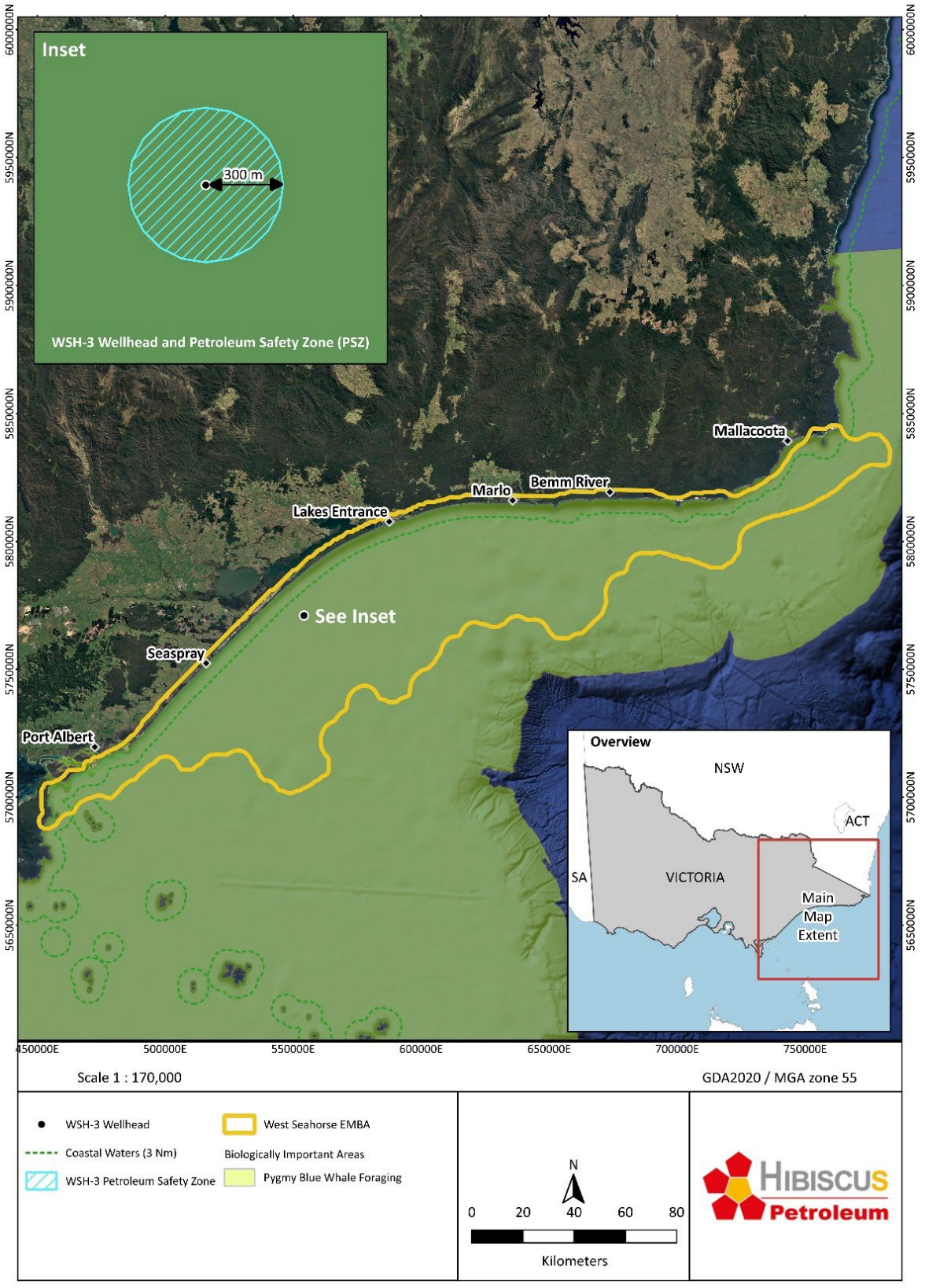


Figure 5.5 Pygmy Blue Whale Foraging BIA

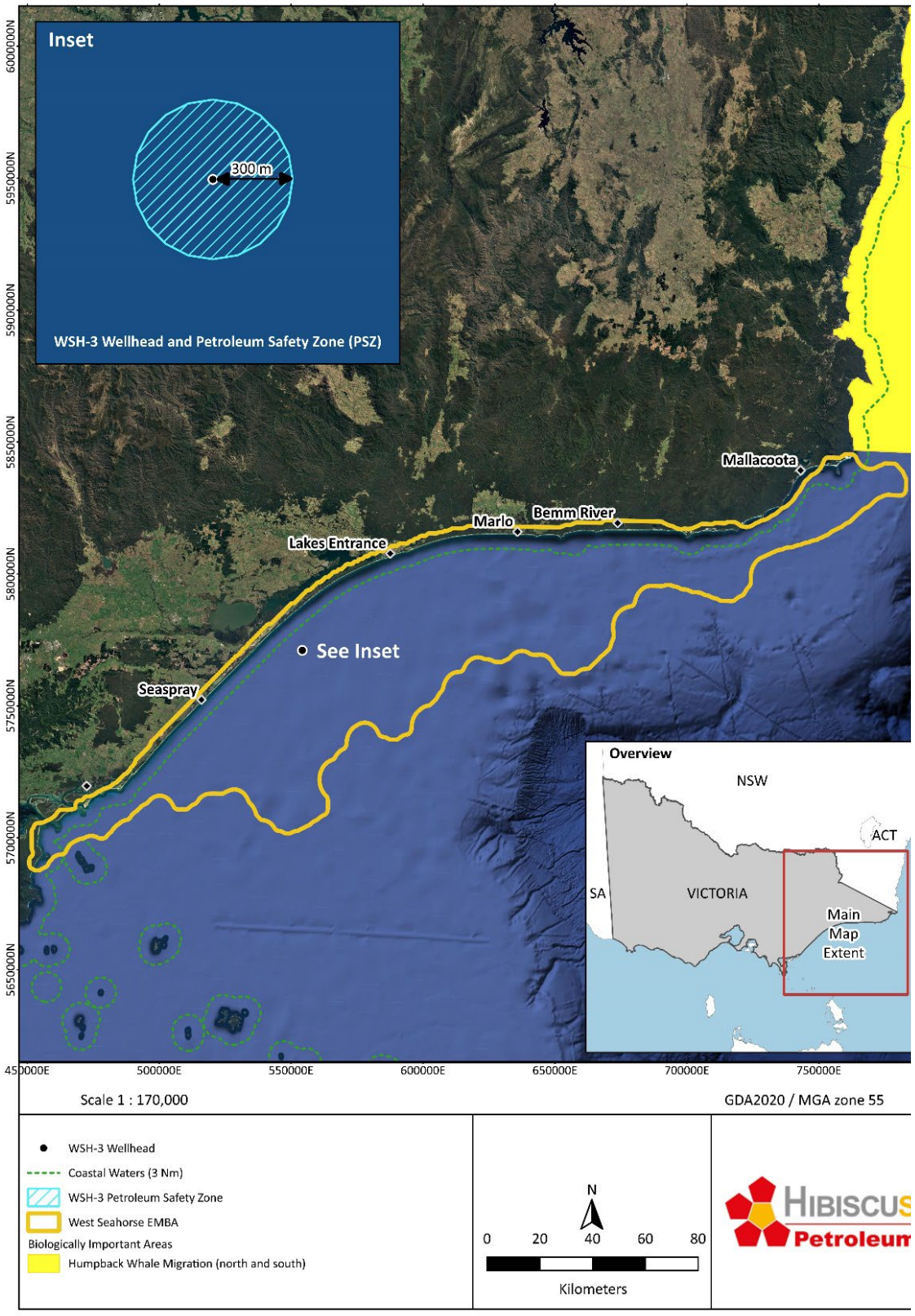


Figure 5.6: Humpback whale migration BIA

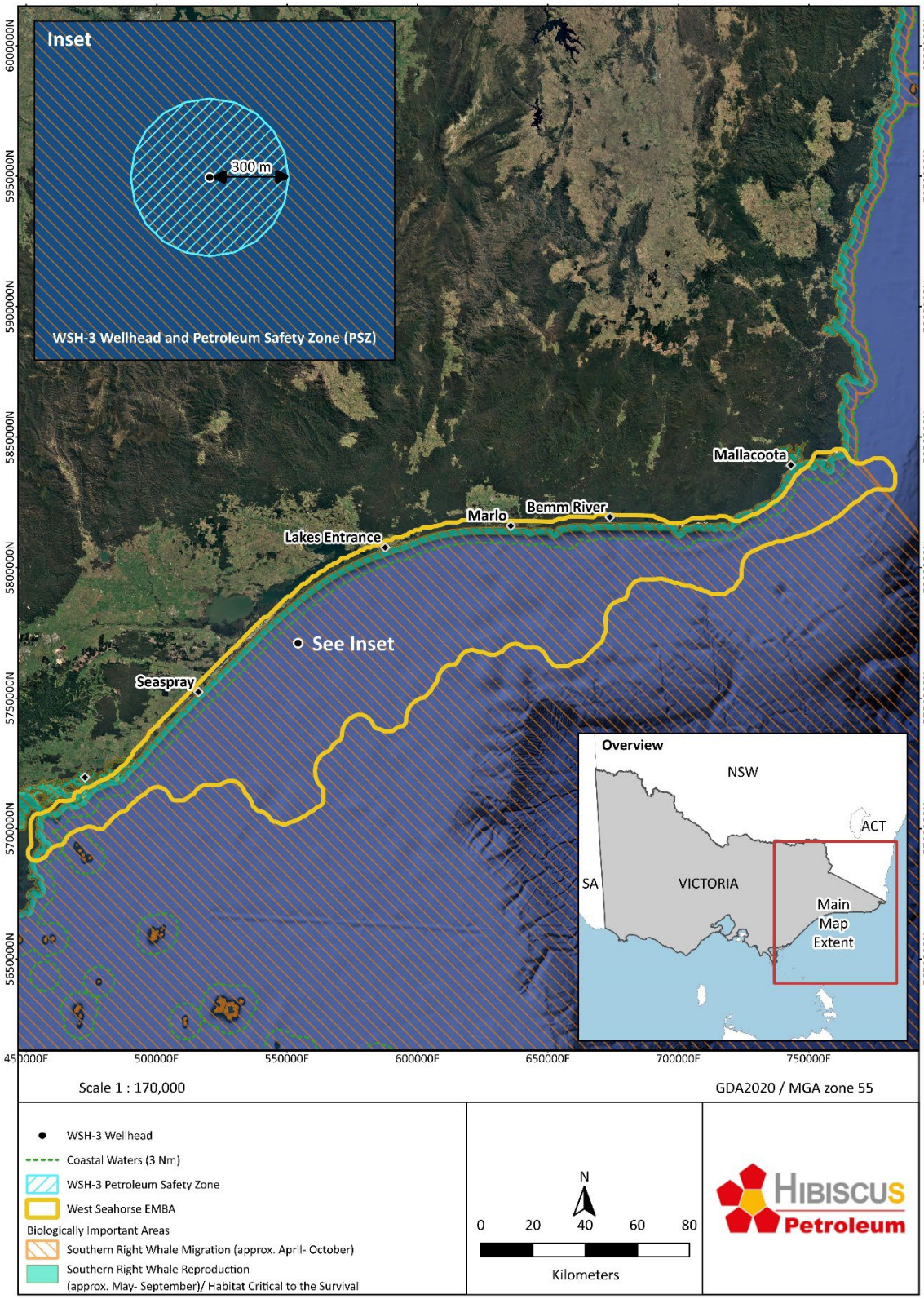


Figure 5.7 Southern right whale reproduction and migration BIAs

Dolphins (EPBC Act: Listed marine species)

None of the dolphins listed in the PMST results are listed as threatened under the EPBC Act of FFG Act. Many dolphins are cosmopolitan species that are generally restricted to continental shelf environments. A brief description of these dolphin species is provided below.

- The **dusky dolphin** (*Lagenorhynchus obscures*) is primarily found from approximately 55°S to 26°S, though sometimes further north associated with cold currents. They are considered to be primarily an inshore species but can also be oceanic when cold currents are present (Gill et al., 2000; Ross, 2006). Only 13 reports of the dusky dolphin have been made in Australia since 1828, and key locations are yet to be identified (Bannister et al., 1996).
- The **common dolphin** (*Delphinus delphis*) is an abundant species, widely distributed from tropical to cool temperate waters, and generally further offshore than the bottlenose, although small groups may venture close to the coast and enter bays and inlets. They have been recorded in waters off all Australian states and territories. Stranding statistics indicate that common dolphins are active in Bass Strait at all times of the year, though less so in winter (DoEE, 2018h).
- The **bottlenose dolphin** (*Tursiops truncatus*) has a worldwide distribution from tropical to temperate waters. There are two forms of bottlenose dolphin, a nearshore form and an offshore form. The nearshore form occurs in southern Australia (DoEE, 2018h). Most populations are relatively discrete and reside in particular areas, such as individual resident populations in Port Phillip Bay (256 km west of the Operational Area) and Westernport Bay (195 km west of the Operational Area).
- **Risso's dolphin** (*Grampus griseus*) is a widely distributed species found in deep waters of the continental slope and outer shelf from the tropics to temperate regions. This species prefers warm temperate to tropical waters with depths greater than 1,000 m (Bannister et al., 1996). In Australia, the species has been recorded from all states except Tasmania and the Northern Territory. Fraser Island (off the southern Queensland coast) has the only suspected 'resident' population in Australia (Bannister et al., 1996).
- The **killer whale** (*Orcinus orca*) (the largest member of the dolphin family) is thought to be the most cosmopolitan of all cetaceans and appear to be more common in cold, deep waters, though they have often been observed along the continental slope and shelf particularly near seal colonies (Bannister et al., 1996). The only recognised key locality in Australia is Macquarie Island and Heard Island in the Southern Ocean (Bannister et al., 1996). It is possible that killer whales may occur in the Operational Area.
- The **Indopacific/Spotted Bottlenose Dolphin** (*Tursiops aduncus*) is listed as a cetacean under the EPBC Act. In the Indian and Western Pacific Oceans, this species has a shorter body and skull length than Common Bottlenose Dolphins, with both males and females reaching about 2.29 m in eastern Australia (Hale et al. 2000). They live in fission-fusion societies, where groups form into larger units and split into smaller ones, with stable, long-term associations between same-sex individuals (Connor et al. 2000; Möller et al. 2001; Möller et al. 2006). Mean group sizes range from between five (Möller et al. 2002) and 16 individuals (Corkeron 1997). Bottlenose dolphins are distributed continuously around the Australian mainland, but the taxonomic status of many populations is unknown.

  Indian Ocean Bottlenose Dolphins have been confirmed to occur in estuarine and coastal waters of eastern, western and northern Australia (Hale et al. 2000; Möller & Beheregaray 2001; Ross & Cockcroft 1990). It has also been suggested that the species occurs in southern Australia (Kemper 2004), but genetic data suggest that in-shore/near-shore animals in this region may belong to another, yet undescribed, species (Charlton et al. 2006; Möller et al. 2008). Indian Ocean Bottlenose Dolphins are known to occur in four main regions around Australia: eastern Indian Ocean, Tasman Sea, Coral Sea, and Arafura/Timor Seas. The main threats likely to affect Australian populations of Indian Ocean Bottlenose Dolphins include indirect catches in trawl; gillnet (including in shark nets to protect bathers); purseseine and trap fisheries entanglements

(Shaughnessy et al. 2003); tourism (Bedjer et al. 2006); habitat destruction and degradation (Ross 2006); and overfishing. Indian Ocean Bottlenose Dolphins reproduction BIA overlaps with the EMBA (Figure 5.9).

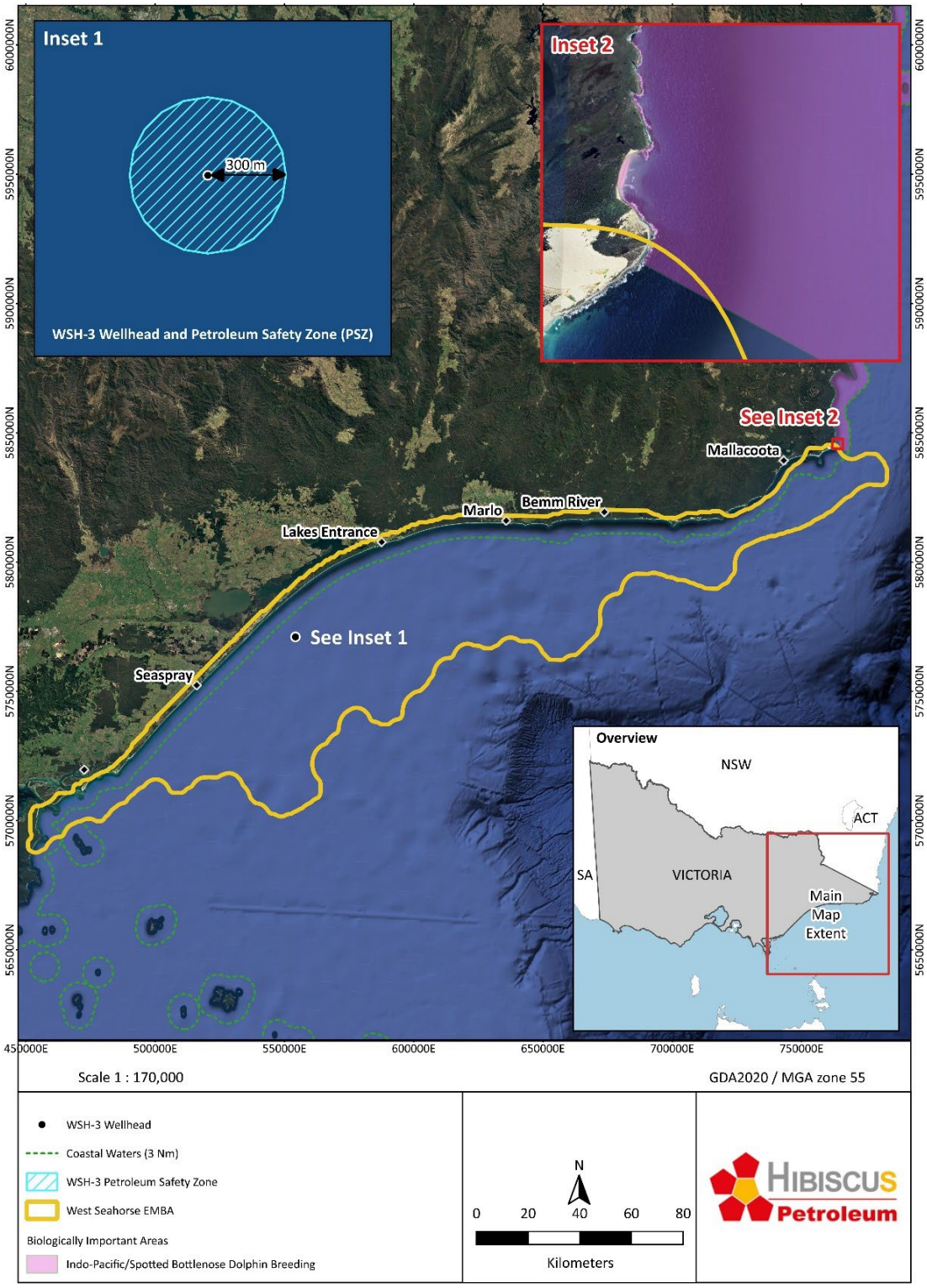


Figure 5.8 Indian Ocean/ Spotted Bottlenose Dolphin reproduction BIA

5.5.7 PINNIPEDS

There are two pinniped species recorded under the EPBC Act PMST as potentially occurring within the EMBA but not in the operational area (DoEE, 2024) – the New Zealand fur-seal (*Arctocephalus forsteri*) and the Australian fur-seal (*Arctocephalus pusillus*). These species are not listed as threatened under the FFG Act.

New Zealand fur-seal (*Arctocephalus forsteri*) (EPBC Act: Listed marine, FFG Act: Not listed)

New Zealand fur-seals (also known as long-nosed fur-seals) are mostly found in central South Australian waters (Kangaroo Island to South Eyre Peninsula) with 77% of their population found here (Shaughnessy, 1999).

Haul-out sites in Bass Strait, as reported by Barton et al (2012) and OSRA mapping, are listed below (all of which occur outside the Operational Area and all except Beware Reef lie outside the EMBA):

- Beware Reef (111 km northeast of the Operational Area);
- Kanowna Island (155 km southwest of the Operational Area) - ~300 individuals;
- The Hogan Islands Group (125 km southwest of the Operational Area); and
- West Moncoeur Island (south of Wilson's Promontory, 149 km southwest of the Operational Area).

There is no BIA for the New Zealand fur-seal in Bass Strait. Given the relatively close proximity of the Operational Area to breeding colonies and haul-out sites and the far-ranging behaviour of New Zealand fur-seals, it is likely that the species feeds within the Operational Area. However, there are no islands or rock outcrops within the Operational Area, so a resident population is unlikely to occur. These waters are unlikely to represent important feeding or breeding habitat.
There is no approved Conservation Advice or Recovery Plan for this species.

Australian fur-seal (*Arctocephalus pusillus*) (EPBC Act: Listed marine, FFG Act: Not listed)

The Australian fur-seal has a relatively restricted distribution around the islands of Bass Strait, parts of Tasmania and southern Victoria.

There are 10 established breeding colonies of the Australian fur-seal that are restricted to islands in the Bass Strait; six occurring off the coast of Victoria and four off the coast of Tasmania (DoEE, 2019). The largest of the established colonies occur at Lady Julia Percy Island (26% of the breeding population and 491 km west of the Operational Area) and at Seal Rocks in Victoria (25% of the breeding population and 223 km west-southwest of the Operational Area) (Kirkwood et al. 2010; Shaughnessy et al. 2002). These areas are not located within the Operational Area.
There is no approved Conservation Advice or Recovery Plan for this species.

5.5.8 MARINE REPTILES

Four species of marine turtle are listed under the EPBC Act as potentially occurring in the EMBA, as listed in Table 5.7 (DoEE, 2024). No BIAs for turtles occur within the Operational Area or EMBA. Environment Australia (2003) reports that the turtles known to occur in Victorian waters are considered to be rare vagrants outside their usual range. No turtles are listed as threatened under the FFG Act 1988 (Vic), except for the leatherback turtle.

Table 5-7 EPBC Act-listed marine reptiles that may occur in the EMBA

Scientific Name	Common Name	EPBC Act status			FFG Act status	Present in the OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species	Listed marine species				

Caretta caretta	Loggerhead turtle	Endangered	Yes	Yes	-	Yes	-	Generic RP in place for all marine turtle species, + AS and CA for leather-back turtle
Chelonia mydas	Green turtle	Vulnerable	Yes	Yes	-	Yes	-	
Dermochelys coriacea	Leatherback turtle	Endangered	Yes	Yes	CE	Yes	-	
Eretmochelys imbricata	Hawksbill turtle	Vulnerable	Yes	Yes	-	-	-	

*Refer to Table 5-4 for key and definitions.

The loggerhead (*Caretta caretta*) and green (*Chelonia mydas*) turtle species noted in the PMST results are typically distributed in sub-tropical and tropical waters including eastern, northern and western Australia (DoEE, 2017). There are no known turtle nesting beaches for these species within Victoria and as such the Operational Area is unlikely to represent important habitat (DoEE, 2017).

The leatherback turtle (*Dermochelys coriacea*) is widely distributed throughout tropical, sub-tropical and temperate waters of Australia (DoEE, 2017). No major nesting has been recorded in Australia, with isolated nesting recorded in the Northern Territory, Queensland and northern NSW (DoEE, 2017). This species nests only in the tropics. The DoEE (2017) maps the leatherback turtles as having a known or likely range within Bass Strait, and a migration pathway in southern waters. The waters of the Operational Area do not represent critical habitat for the species, though it may occur in low numbers during migration.

5.5.9 AVIFAUNA

Thirty-three (30) bird species (seabirds and shorebirds) are listed under the EPBC Act as potentially occurring in the Operational Area (DoEE, 2024) (Table 5.8). The common diving petrel (*Pelecanoides urinatrix*) is not listed as threatened or migratory in the PMST search but there is a foraging BIA that overlaps. It is therefore deemed as having potential of occurring in the Operational Area and is included in Table 5.8.

The EMBA overlaps 73 bird species, including 30 species listed as vulnerable, 12 endangered species and 4 critically endangered. In addition, the White-faced storm petrel and Little Penguin both have breeding and foraging BIAS that overlap the EMBA but are not listed as threatened or migratory in the PMST search. With a BIA overlapping the EMBA it is likely that they will be present in the area and are listed in Table 5.8.

The following birds have a foraging BIA that overlaps the Operational Area:

- Wandering Albatross
- Bullers Albatross
- Shy Albatross (*likely* foraging BIA)
- Indian Yellow-nosed Albatross
- Black-browed Albatross
- Campbell Albatross
- Common Diving-petrel

The following birds have a foraging and/or breeding BIA that overlaps the EMBA:

- Antipodean Albatross (foraging)

- Little Penguin (breeding and foraging)
- White-faced storm petrel (foraging)
- Short-tailed shearwater (breeding and foraging)
- Shy Albatross (*likely* foraging)

The focus of this section is true seabirds. Shorebird species are only relevant given that the EMBA intersects the shoreline. Seabirds are those species of bird whose normal habitat and food source is derived from the sea, whether that be coastal or offshore, while shorebirds spend most of their time (nesting, feeding and breeding) on the shoreline.

Table 5-8 EPBC Act-listed true seabirds that may occur in the EMBA

Scientific Name	Common Name	EPBC Act status			FFG Act status	Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species	Listed marine species					
True seabirds									
Albatross									
Diomedea antipodensis	Antipodean albatross	V	Yes	Yes	-	Yes	-	F	Generic RP in place for all albatross in Australia, CA for the Shy Albatross and the grey-headed albatross
Diomedea antipodensis gibsoni	Gibson's albatross	V	-	Yes	-	Yes	-	-	
Diomedea epomophora (sensu stricto)	Southern royal albatross	V	Yes	Yes	CE	Yes	-	-	
Diomedea exulans (sensu lato)	Wandering albatross	V	Yes	Yes	CE	Yes	F	F	
Diomedea sanfordi	Northern royal albatross	E	Yes	Yes	-	Yes	-	-	
Phoebetria fusca	Sooty albatross	V	Yes	Yes	CE	Yes	-	-	
Thalassarche bulleri	Buller's albatross	V	Yes	Yes	E	Yes	F	F	
Thalassarche bulleri platei	Northern Buller's albatross	V	-	-	-	Yes	-	-	
Thalassarche carteri	Indian Yellow-nosed Albatross	V	Yes	Yes	E	Yes	F	F	
Thalassarche cauta	Shy albatross	E	Yes	Yes	E	Yes	F (likely)	F (likely)	
Thalassarche chrysostoma	Grey-headed albatross	E	Yes	Yes	E	Yes	-	-	

Scientific Name	Common Name	EPBC Act status			FFG Act status	Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species	Listed marine species					
Thalassarche eremita	Chatham Albatross	E	Yes	Yes	-	-	-	-	
Thalassarche impavida	Campbell albatross	V	Yes	Yes	-	Yes	F	F	
Thalassarche melanophris	Black-browed albatross	V	Yes	Yes	-	Yes	F	F	
Thalassarche salvini	Salvin's albatross	V	Yes	Yes	-	Yes	-	-	
Thalassarche steadi	White-capped albatross	V	Yes	Yes	-	Yes	-	-	
Petrels									
Fregetta grallaria grallaria	White- Bellied Storm Petrel (Tasman Sea)	V	-	-	-	Yes	-	-	MP_[1]
Halobaena caerulea	Blue petrel	V	-	Yes	-	Yes	-	-	CA
Macronectes giganteus	Southern giant petrel	E	Yes	Yes	E	Yes	-	-	Generic RP for giant petrels
Macronectes halli	Northern giant petrel	V	Yes	Yes	E	Yes	-	-	
Pterodroma leucoptera leucoptera	Gould's Petrel	E	-	-	V	Yes	-	-	RP

[1] Biodiversity Management Plan

Scientific Name	Common Name	EPBC Act status			FFG Act status	Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species	Listed marine species					
Pelecanoides urinatrix[2]	Common Diving-petrel	-	-	Yes	-	Yes	F	F	-
Pelagodroma marina[3]	White-faced storm petrel	-	-	Yes	E	-	-	F, B	-
Other seabirds									
Ardenna grisea	Sooty shearwater	V	Yes	Yes *(as Puffinus griseus)*	-	Yes	-	-	CA
Hirundapus caudacutus	White-throated needletail	V	Yes	Yes	V	-	-	-	CA
Lathamus discolor	Swift parrot	CE	-	Yes	CE	-	-	-	CA, RP, AS
Neophema chrysogaster	Orange-bellied parrot	CE	-	Yes	CE	-	-	-	RP, AS
Neophema chrysostoma	Blue-winged parrot	V	-	Yes	-	-	-	-	CA
Pachyptila turtur subantarctica	Fairy Prion (southern)	V	-	Yes (as *Pachyptila turtur*)	-	Yes	-	-	CA

[2] *Pelecanoides urinatrix* is not listed under the EPBC Act as a threated or migratory species but there is a foraging BIA that overlaps the OA and EMBA and deemed relevant to include in the above table.

[3] *Pelagodroma marina* is not listed under the EPBC Act as a threated or migratory species but there is a foraging and breeding BIA that overlaps the EMBA and deemed relevant to include in the above table.

Scientific Name	Common Name	EPBC Act status			FFG Act status	Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species	Listed marine species					
Rostratula australis	Australian Painted Snipe	E	-	Yes	CE	-	-	-	CA, RP
Apus pacificus	Fork-tailed swift	-	Yes	Yes	-	-	-	-	-
Ardenna carneipes	Flesh-footed shearwater	-	Yes	Yes	-	Yes	-	-	-
Ardenna tenuirostris	Short-tailed shearwater	-	Yes	Yes	-	-	-	F, B	-
Monarcha melanopsis	Black-faced monarch	-	Yes	Yes	-	-	-	-	-
Motacilla flava	Yellow wagtail	-	Yes	Yes	-	-	-	-	-
Myiagra cyanoleuca	Satin flycatcher	-	Yes	Yes	-	-	-	-	-
Pandion haliaetus	Osprey	-	Yes	Yes	-	-	-	-	-
Rhipidura rufifrons	Rufous Fantail	-	Yes	Yes	-	-	-	-	-
Sternula albifrons	Little tern	-	Yes	Yes	CE	-	-	-	AS
Symposiachrus trivirgatus	Spectacled monarch	-	Yes	Yes	-	-	-	-	-
Thalasseus bergii	Greater Crested Tern	-	Yes	Yes	-	-	-	-	-
Shorebirds									
Arenaria interpres	Ruddy turnstone	V	Yes	Yes	E	-	-	-	CA
Botaurus poiciloptilus	Australasian Bittern	E	-	-	CE		-		CA, RP, AS

Scientific Name	Common Name	EPBC Act status			FFG Act status	Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species	Listed marine species					
Calidris acuminata	Sharp-tailed sandpiper	V	Yes	Yes	-	Yes	-	-	CA
Calidris canutus	Red knot	V	Yes	Yes	E	Yes	-	-	CA
Calidris ferruginea	Curlew sandpiper	CE	Yes	Yes	CE	Yes	-	-	CA
Calidris tenuirostris	Great knot	V	Yes	Yes	CE	-	-	-	CA
Charadrius leschenaultii	Greater sand plover	V	Yes	Yes	V	-	-	-	CA
Charadrius mongolus	Lesser sand plover	E	Yes	Yes	E	-	-	-	CA
Falco hypoleucos	Grey Falcon	V	-	-	V	-	-	-	CA, AS
Gallinago hardwickii	Latham's snipe	V	Yes	Yes	-	-	-	-	CA
Limosa limosa	Black-tailed godwit	E	Yes	Yes	CE	-	-	-	CA
Limosa lapponica baueri	Western Alaskan Bar tailed Godwit	E	-	-	-	-	-	-	CA
Numenius madagascariensis	Eastern curlew	CE	Yes	Yes	CE	Yes	-	-	CA, AS
Pluvialis squatarola	Grey plover	V	Yes	Yes	V	-	-	-	CA
Sternula nereis nereis	Australian Fairy Tern	V	-	-	-	Yes	-	-	CA, RP

Scientific Name	Common Name	EPBC Act status			FFG Act status	Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species	Listed marine species					
Thinornis cucullatus cucullatus	Eastern Hooded Plover	V	-	Yes	-	-	-	-	CA, AS[4]
Tringa nebularia	Common Greenshank	E	Yes	Yes	E	-	-	-	CA
Xenus cinereus	Terek sandpiper	V	Yes	Yes	E	-	-	-	CA
Actitis hypoleucos	Common sandpiper	-	Yes	Yes	V	Yes	-	-	-
Calidris alba	Sanderling	-	Yes	Yes	-	-	-	-	-
Calidris melanotos	Pectoral sandpiper	-	Yes	Yes	-	Yes	-	-	-
Calidris pugnax	Ruff	-	Yes	Yes	-	-	-	-	-
Calidris ruficollis	Red-necked stint	-	Yes	Yes	-	-	-	-	-
Charadrius bicinctus	Double-banded Plover	-	Yes	Yes	-	-	-	-	-
Charadrius veredus	Oriental plover	-	Yes	Yes	-	-	-	-	-
Eudyptula minor[5]	Little Penguin	-	-	Yes	-	-	-	F, B	-
Gallinago megala	Swinhoe's Snipe	-	Yes	Yes	-	-	-	-	-
Gallinago stenura	Pin-tailed snipe	-	Yes	Yes	-	-	-	-	-

[4] There is an Action Statement for the Hooded plover *Thinornis cucullatus* in place. It is assumed that this AS also applies to subspecies the Eastern hooded plover given its geographic distribution.

[5] *Eudyptula minor* is not listed under the EPBC Act as a threated or migratory species but there is a foraging and breeding BIA that overlaps the EMBA and deemed relevant to include in the above table.

Scientific Name	Common Name	EPBC Act status			FFG Act status	Present in OA?	BIA within OA?	BIA within the EMBA?	Recovery Plan in place?
		Listed threatened species	Listed migratory species	Listed marine species					
Limosa lapponica	Bar-tailed godwit	-	Yes	Yes	V	-	-	-	-
Numenius minutus	Little curlew	-	Yes	Yes	-	-	-	-	-
Numenius phaeopus	Whimbrel	-	Yes	Yes	E	-	-	-	-
Pluvialis fulva	Pacific Golden Plover	-	Yes	Yes	V	-	-	-	-
Tringa brevipes	Grey-tailed tattler	-	Yes	Yes	CE	-	-	-	-
Tringa glareola	Wood sandpiper	-	Yes	Yes	E	-		-	-
Tringa stagnatilis	Marsh sandpiper	-	Yes	Yes	E	-		-	-

*Refer to Table 5-4 for key and definitions.

Exclusively Seabirds

Albatross (EPBC Act: Endangered & vulnerable, listed migratory, FFG Act: many listed as threatened)
Albatrosses (and giant-petrels) are among the most dispersive and oceanic of all birds, spending more than 95% of their time foraging at sea in search of prey and usually only returning to land (remote islands) to breed. Only five species of albatross and the southern and northern giant petrel are known to breed within Australia. Breeding within Australian territory occurs on the isolated islands of Antarctica (Giganteus Island, Hawker Island and Frazier islands) and the Southern Ocean (Heard Island, McDonald Island, Macquarie Island, Bishop and Clerk Islands), as well as islands off the south coast of Tasmania and Albatross Island off the north-west coast of Tasmania in Bass Strait (DSEWPC, 2011). These locations are each hundreds of kilometres away from the Operational Area.

The PMST results (DoEE, 2024) indicates that species foraging, feeding or related behaviours exist within the Operational Area for nine of the albatross species which are noted in Table 5.8, with foraging taking place throughout all of Bass Strait. Given these species' ability to cover vast ocean distances while foraging, it is possible they may overfly and forage in the vicinity of the Operational Area.

Wandering albatross (*Diomedea exulans*) (EPBC Act: Vulnerable)

The Wandering Albatross is marine, pelagic and aerial (Falla 1937; Hicks 1973) and it has the longest wing-span of any ocean bird, spanning 2.5 - 3.5 m. The Wandering Albatross eats mainly squid and fish, but also crustaceans and carrion (Marchant & Higgins 1990). The species feeds mainly in pelagic, offshore and inshore waters feeding from the sea surface or just below it, or makes shallow dives from heights of 2-5 m (Harper 1987; Voisin 1981). It regularly feeds in sheltered harbours and straits (Secker 1969). The Wandering Albatross breeds on Macquarie Island (Marchant & Higgins 1990) and it feeds mainly in pelagic, offshore and inshore waters from the sea surface or just below it or makes shallow dives from heights of 2-5 m (Harper 1987; Voisin 1981). The mobility of this species means that individuals have a high probability of encountering longline fishing boats from which they take bait (Brothers 1991; Gales et al. 1998). Therefore, birds breeding within the Australian Fishing Zone are still killed on longlines from vessels operating outside the Australian Fishing Zone (AGDEH 2006q).

A foraging BIA overlaps the OA and the EMBA (Figure 5.10).

Bullers albatross (*Thalassarche bulleri*) (EPBC Act: Vulnerable)

Buller's Albatross is a lightly built albatross that is 76–80 cm long and has a wingspan of 200–213 cm (Marchant & Higgins 1990). It feeds mostly on squid, supplemented by fish, krill and tunicates (Marchant & Higgins 1990) and it probably takes food by surface-siezing, although they have been recorded following fishing boats as well as diving to 10 m into swarming euphausiids at Snares Island. Most feeding has been observed during the day (Marchant & Higgins 1990). In Australia, they are frequently seen off the coast from Coffs Harbour, south to Tasmania, west to Eyre Peninsula (Blakers et al. 1984; Stahl et al. 1998) and they are most common off south-east Tasmania between January–April (Environment Australia 2001f). The National recovery plan for Albatrosses and Giant-Petrels (Environment Australia 2001f) identified incidental catch during longline fishing operations, competition with fisheries for marine resources and marine pollution as the biggest threats to Buller's Albatross populations in Australian waters.

A foraging BIA overlaps the OA and the EMBA (Figure 5.10).

Shy albatross (*Thalassarche cauta*) (EPBC Act: Endangered)

The species is most frequently found around Tasmania and southern Australia (Brothers et al., 1997; Abbott et al., 2006). Satellite-tracking data show T. cauta is less pelagic than many other albatross species, is usually found over the continental shelf, and regularly venture close to shore along the coasts of Tasmania and southern

Australia (Brothers et al., 1998, Hedd et al., 2001; BirdLife-International, 2004). Thalassarche cauta is an Australian breeding endemic with colonies on only three islands off Tasmania: Albatross Island, Pedra Branca and the Mewstone (ACAP, 2009k). Like most marine organisms, T. cauta is exposed to the threats of marine debris, plastic ingestion and pollution, but it is the incidental mortality of T. cauta in fishing operations that is thought to pose the greatest threat. Thalassarche cauta is known to be killed in longline fishing operations in Australian waters (Brothers et al., 1997; Abbott et al., 2006; Gales et al., 1998, Baker et al., 2007).

A foraging BIA overlaps the OA and the EMBA (Figure 5.10).

Indian yellow-nosed albatross (*Thalassarche carteri*) (EPBC Act: Vulnerable)

A small albatross, the Indian yellow-nosed Albatross is approximately 75 cm in length, 2.5-2.9 kg in weight, with a wing length of 46-50 cm, and bill length of 111-124 mm (ACAP 2015, Menkhorst et al. 2017). Australia is within the foraging range of the albatross. The species mainly takes cephalopods (squid) and fish and frequently follows fishing boats, leading to it being caught in considerable numbers on longline fishing gear (Cherel & Klages 1998; Klaer & Polacheck 1997; Weimerskirch et al. 1986). The species breeds on the French subantarctic island groups of Amsterdam, St Paul, Crozet, and Kerguelen Islands and on South Africa's Prince Edward Islands (ACAP, 2009g). Tracking studies and at-sea records indicate that dispersal from the breeding colonies is generally in the higher latitudes of the Indian Ocean from southern Africa to southwest Australia, and occasionally extending into New Zealand waters in the southwest Pacific Ocean (Gales 1998, BirdLife International 2004, Pinaud & Weimerskirch 2007, ACAP 2019g). Satellite-tracking data are only currently available from breeding T. carteri from Amsterdam Island (Pinaud et al., 2005; Pinaud & Weimerskirch, 2005; Pinaud & Weimerskirch, 2007). In waters off southern Western Australia and South Australia the species is most abundant between March and May. Large numbers occur in the Tasman Sea, off southern NSW, in May to June, with adult birds first to arrive, then immatures (Barton 1979).

A foraging BIA overlaps the OA and the EMBA (Figure 5.10).

Black-browed albatross (Thalassarche melanophris) (EPBC Act: Vulnerable)

The Black-browed Albatross is 80–95 cm in length, has a mass of 3–5 kg and a wingspan of 210–250 cm (Marchant & Higgins, 1990) and it is believed to forage during both day and night (Bevan et al. 1995; Croxall & Prince 1994; Harper 1987; Prince & Morgan 1987). The diet consists of a combination of fish, molluscs (mostly cephalopods) and crustaceans (mostly krill). The diet also includes other items such as carrion, jellyfish and salps that are taken less frequently (Cherel et al. 2000; Croxall et al. 1988; Downes et al. 1959; Harper 1987; Petry et al. 2007; Prince 1980; Reid et al. 1996; Ridoux 1994; Rodhouse & Prince 1993; Thompson 1992; Tickell 1964; Weimerskirch et al. 1986). The Black-browed Albatross is gregarious at sea (Marchant & Higgins 1990) and highly gregarious at breeding grounds (Marchant & Higgins 1990), where it occurs in colonies that can consist of tens of thousands of breeding pairs (Gales 1998; Tickell 2000). The Black-browed Albatross breeds within Australian jurisdiction on Heard Island (Kirkwood & Mitchell 1992; Woehler 2006; Woehler et al. 2002), McDonald Islands (Gales 1998; Woehler 2006; Woehler et al. 2002), Macquarie Island (Copson 1988; Gales 1998; Scott 1994c) and Bishop and Clerk Islets (Scott 1994c; Gales 1998). The population migrates northward towards the end of the breeding season (Brooke 2004; Marchant & Higgins 1990; Reid et al. 2002; Tickell 2000; Woehler et al. 1991) and the species is common in the non-breeding period at the continental shelf and shelf-break of South Australia, Victoria, Tasmania, western and eastern Bass Strait and NSW (Barrett et al. 2003; Barton 1979; Blakers et al. 1984; Cox 1973; Marchant 1977; Milledge 1977; Reid et al. 2002; Swanson 1973; Tickell 2000; Woehler et al. 1991; Wood 1992).

A foraging BIA overlaps the OA and the EMBA (Figure 5.10).

Campbell albatross (*Thalassarche impavida*) (EPBC Act: Vulnerable, Migratory)
The Campbell albatross is listed as vulnerable and migratory. It is a non-breeding visitor to Australian waters with birds most commonly seen foraging over the oceanic continental slopes off Tasmania, Victoria and New South Wales (EA 2001f). After breeding, birds move north and may enter Australia's temperate shelf waters (Marchant & Higgins 1990). The Campbell Albatross is a marine sea bird inhabiting sub-Antarctic and subtropical waters from pelagic to shelf-break water habitats (Marchant & Higgins 1990).

A foraging BIA overlaps the OA and the EMBA (Figure 5.10).

Antipodean albatross (*Diomedea antipodensis*) (EPBC Act: Vulnerable, Migratory)

The Antipodean Albatross is marine, pelagic and aerial and it sleeps and rests on ocean waters when not breeding. It is listed as vulnerable and migratory, and a foraging BIA overlaps the EMBA (Figure 5.10). Antipodean Albatrosses are migratory and disperse over the Tasman Sea and South Pacific Ocean as far as the coast of South America during the non-breeding period (Warham & Bell 1979). The species is endemic to New Zealand, however forages widely in open water in the south-west Pacific Ocean, Southern Ocean and the Tasman Sea, notably off the coast of NSW (Elliott & Walker 2005; Environment Australia 2001; Garnett & Crowley 2000). It feeds primarily on cephalopods, fish and crustaceans (BirdLife International 2009; Gales 1998). Their foraging behavior involves flying long distances in search of food, following boats, aggressively feeding on offal, and diving for bait (AGDEH 2006q).

A foraging BIA overlaps the EMBA (Figure 5.10).

Petrels (EPBC Act: Vulnerable and endangered, some listed migratory)
The five petrel species listed in Table 5.8 as potentially flying over the Operational Area are widely distributed throughout the southern hemisphere. They nest on isolated islands and breed on sub-Antarctic and Antarctic islands. The northern giant-petrel and southern giant-petrel share the same breeding areas listed for the albatross (DSEWPaC, 2011). Outside the breeding season (October to February), petrels disperse widely and move north into sub-tropical waters (DSEWPaC, 2011). Most petrel species feed on krill, squid, fish, other small seabirds and marine mammals (DSEWPaC, 2011). No breeding colonies or nesting areas for the listed petrel species are located in or near the Operational Area.

White-faced Storm-petrel (*Pelagodroma marina*) (EPBC Act: marine listed)

The White-faced Storm-petrel is a medium sized, distinctively patterned storm-petrel, common over inshore and oceanic waters around southern Australia. The species has an extremely large range and breeds on the coast of southern Australia and New Zealand. A foraging and breeding BIA overlaps the EMBA (Figure 5.10). Outside the breeding season the Australian population range as far as the northern Indian Ocean and the north-west coast of South America. White-faced Storm-petrels generally breed in colonies during spring and summer, forming burrows in flat areas with low herbaceous vegetation but also in rocky areas and on slops. The species primarily feeds on planktonic crustaceans and small fish, mainly catching them from the wing by pattering, dipping, and surface seizing (CoA, 2020).

A foraging and breeding BIA overlaps the EMBA (Figure 5.10).

Common diving-petrel (*Pelecanoides urinatrix*) (EPBC Act: listed)
The common diving petrel is not listed as threatened or migratory, but a BIA does overlap the EMBA. It is native to South Atlantic islands and islands of the subantarctic southern Indian Ocean, islands and islets off New Zealand and south-eastern Australian islands. Like other members of their family they catch prey by wing-propelled diving, and are capable of diving to 60 m (200 ft). The diet of this species is dominated by crustaceans (Brooke, 2004). They are known to forage at night on vertically migrating plankton. Feeding is mostly done in the ocean

near the shore, but sometimes in the deeper pelagic zone during non-breeding season, which is only 2 months of the year.

A foraging BIA overlaps the OA and the EMBA (Figure 5.10).

Other seabirds

Other seabirds listed in the PMST that may occur within the Operational Area are described here.

- The shearwater species (**flesh-footed and sooty**) are trans-equatorial migrants widely distributed across the Pacific and Atlantic oceans and is known to inhabit the waters of Australia where they feed on fish. Both species have breeding populations on Lord Howe Island (off NSW). The flesh-footed shearwater breeds in burrows on sloping ground in coastal forest, scrubland, shrubland or grassland. Thirty-nine (39) of the 41 islands on which this species breeds lie off the coast of southern Western Australia. It is possible these species may overfly the Operational Area.
- The **short-tailed shearwater** (*Ardenna teniurostris*) have a blunt tail, black bill and a wing span of 1 m. This species is listed as migratory and marine under the EPBC Act. It migrate to the northern hemisphere for the austral winter i.e. they generally only present in Australian waters from September–May (Baker & Hamilton 2013). They are common in the South-east Marine Region and the foraging and breeding BIA overlaps the EMBA (Figure 5.10). Breeding occurs mainly on coastal islands, typically in areas of grassland or other vegetation, but sometimes cliffs or bare ground (del Hoyo et al. 1992). The short-tailed shearwater conducts a bimodal feeding strategy whilst breeding, alternating short foraging trips to local waters with long foraging trips. Diet includes fish (particularly mycotphids), crustaceans and squid (Weimerskirch & Cherel 1998).
- The **great skua** (*Catharacta skua*) is a large migratory seabird distributed throughout all southern Australian waters (though not listed as migratory under the EPBC Act). This species breeds in summer on nested elevated grasslands or sheltered rocky areas on sub-Antarctic islands, with most adult birds leaving their colonies in winter. Great skuas feed on other seabirds, fish, molluscs and crustaceans, and may be present in the Operational Area and EMBA (though scarce) during winter (Flegg, 2002).
- The **southern fairy prion** (*Pachyptila turtur subantarctica*) is mainly found offshore. The species diet is comprised mostly of crustaceans (especially krill), but occasionally includes some fish and squid. It feeds mainly by surface-seizing and dipping, but can also catch prey by surface-plunging or pattering (DoEE, 2024). In Australia, it is known to breed only on Macquarie, Bishop and Clerk islands (over 2,000 km southeast of the Operational Area) (DoEE, 2024).
- The **osprey** (*Pandion haliaetus*) is a common, medium-sized raptor that is present around the entire Australian coastline, with the breeding range restricted to the north coast of Australia (including many offshore islands) and an isolated breeding population in South Australia (DoEE, 2019h). Breeding occurs from April to February. Ospreys occur mostly in coastal areas but occasionally travel inland along waterways, where they feed on fish, molluscs, crustaceans, reptiles, birds and mammals. Due to their broad habitat, osprey may be present in the Operational Area.
- The **Little Penguin** (*Eudyptula minor*) are the smallest of all penguins, and it is listed as marine under the EPBC Act. Standing about 30 to 35 cm in height, they weigh approximately 1 kg when fully grown. A foraging and breeding BIA for this species overlaps the EMBA (Figure 5.10). The Little Penguin breeds during the austral autumn to summer months and their breeding distribution extends from the Shoalwater Island Group (Penguin and Carnac Islands), near Perth in Western Australia, across the southern coast (including Bass Strait and Tasmania) and up the east coast as far as South Solitary Island in New South Wales (Klomp and Wooller 1991, Blakers et al 1984, Marchant and Higgins 1990). The Little penguin is a generalist feeder feeding mainly on clupeids, such as anchovy and sardines, when feeding chicks, but they may also feed on krill and several species of cephalopods at all stages of breeding (Gales and Pemberton 1990, Cullen et al. 1992, Chiaradia et al. 2012).

Shorebirds and Coastal Species

The avifauna species listed under 'True Shorebirds' in Table 5.8 typically utilise coastal habitats for feeding, nesting, roosting and, where appropriate, migration. Given that the Operational Area occurs approximately 13 km offshore and represents habitat not typically utilised by the listed species, shorebirds and coastal species are not described further in this EP.

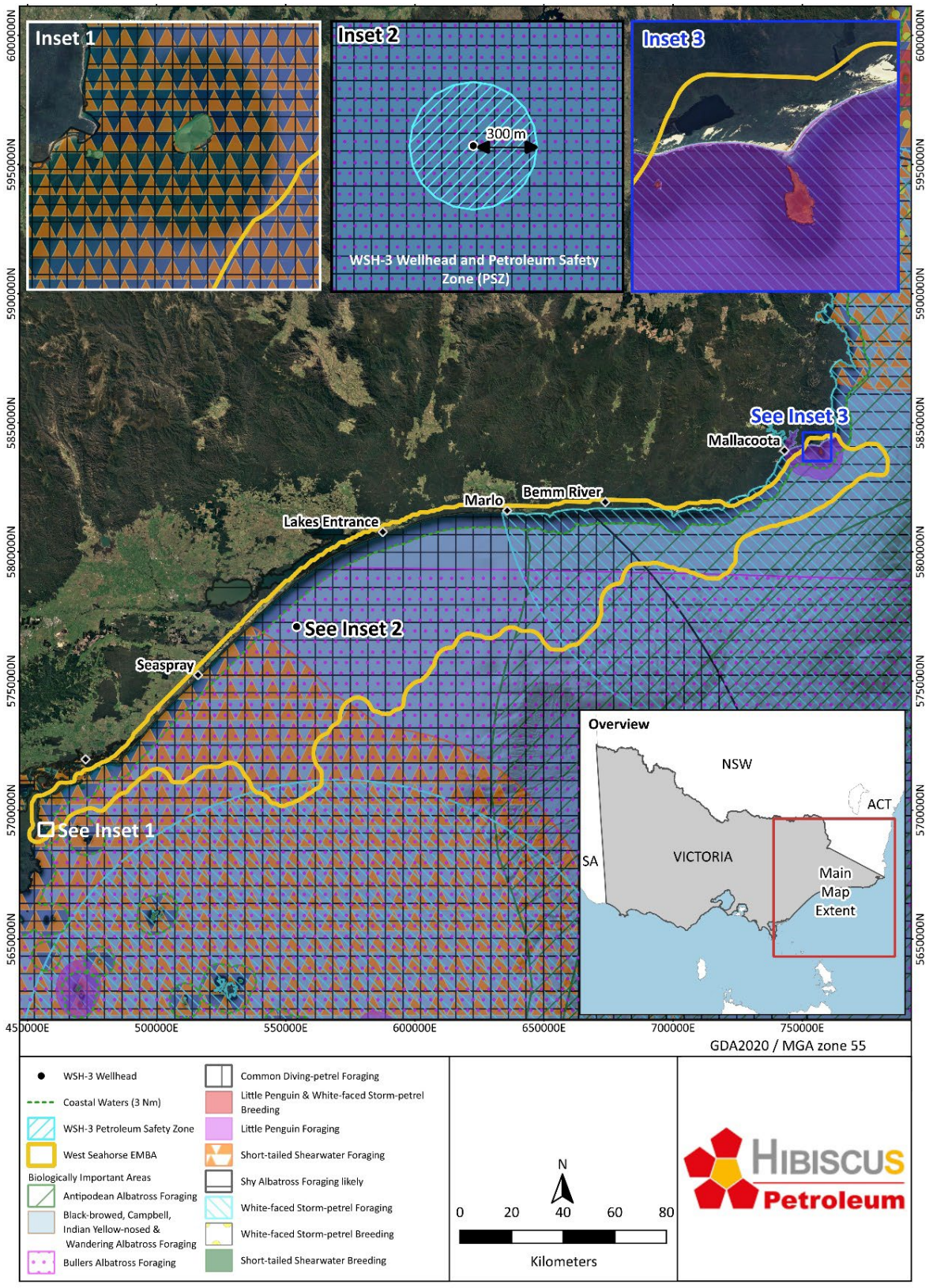


Figure 5.9 Marine Avifauna BIA

5.5.10 SUMMARY OF BIOLOGICALLY IMPORTANT AREAS

A search of the EPBC Act Protected Matters Database in July 2024 identified a number of species that have a BIA that overlaps the Operational Area and/or the EMBA. BIAs such as foraging, breeding and known migration routes for these species are shown in Table 5.9 and presented in figures above in relevant sections.

Table 5-9: Biologically Important Areas located within the EMBA

Class	Common name	Scientific name	BIA area	Overlaps Operational Area	Overlaps EMBA
Fish	Great white shark	*Carcharodon carcharias*	Foraging	✗	✓
			Breeding (nursery area)	✓	✓
Marine mammals	Pygmy Blue whale	*Balaenoptera musculus*	Foraging	✓	✓
	Southern Right Whale	*Eubalena australis*	Reproduction (May to September)	✗	✓
			Migration (April to October)	✓	✓
	Indo-pacific/ Spotted Bottlenose dolphin	*Tursiops aduncus*	Breeding	✗	✓
Seabirds	Antipodean albatross	*Diomedea antipodensis*	Foraging	✗	✓
	Wandering albatross	*Diomedea exulans (sensu lato)*	Foraging	✓	✓
	Buller's albatross	*Thalassarche bulleri*	Foraging	✓	✓
	Indian Yellow-nosed Albatross	*Thalassarche carteri*	Foraging	✓	✓
	Shy albatross	*Thalassarche cauta*	Foraging likely	✓	✓
	Campbell albatross	*Thalassarche impavida*	Foraging	✓	✓
	Black-browed albatross	*Thalassarche melanophris*	Foraging	✓	✓
	Short-tailed shearwater	*Ardenna tenuirostris*	Foraging, Breeding	✗	✓
	Common Diving petrel	*Pelecanoides urinatrix*	Foraging	✓	✓
	White-faced storm petrel	*Pelagodroma marina*	Foraging, Breeding	✗	✓
	Little Penguin	*Eudyptula minor*	Foraging, Breeding	✗	✓

5.5.11 MARINE PESTS

Invasive Marine Species (IMS) are defined as non-native marine plants or animals that harm Australia's marine environment, social amenity or industries that use the marine environment, or have the potential to do so if they were to be introduced, established (that is, forming self-sustaining populations) or spread in Australia's marine environment (DAWR, 2018).

In the South-east Marine Region, 115 marine pest species have been introduced and an additional 84 have been identified as possible introductions, or 'cryptogenic' species (NOO, 2002). Several introduced species have become pests either by displacing native species, dominating habitats or causing algal blooms.

Marine pests known to occur in South Gippsland, according to ParksVic (2015), are listed in Table 5.10 with further detail on their usual habitat type and water depth, and known locations of establishment.

Table 5-10 Marine pests known to occur in South Gippsland (Adapted from NIMPIS (2022))

Species		Habitat			Known locations of establishment	Relevant vector of spreading
Common Name	Scientific Name	Hard	Soft	Depth (m)		
Northern Pacific Seastar	*Asterias amurensis*	• Bedrock • Reef	• Sand (coarse) • Silt	<25m in Australia, however found <200m in Japan	Port Phillip Bay in Melbourne, Victoria WA	Ballast water transport in ships arriving into Australian waters, biofouling.
Wakame	*Undaria pinnatifida*	• Artificial • Bedrock • Boulder • Cobble • Oyster • Pylons (concrete and timber) • Reef • Vessel • Wood	• Gravel • Sand (very coarse)	<25m, more common in subtidal habitats 1-8m depth	Tasmania and southern Victoria	Ballast water, biofouling.
Pacific Oyster	*Crassostrea gigas*	• Artificial • Bedrock • Boulder • Cobble • Oyster • Pylons (concrete and timber) • Reef • Vessel • Wood	• Clay • Sand - fine	~3m, mid and low intertidal zones	New South Wales, South Australia, Tasmania, and Victoria	Ballast water, biofouling.
Green Shore Crab/European Shore Crab	*Carcinus maenus*	• Artificial • Bedrock • Oyster	• Sand - coarse • Sand - fine	Intertidal zone, <60m	Established populations in NSW, VIC, TAS and SA. In	Biofouling assemblages, solid ballast, fouled seawater

Species		Habitat			Known locations of establishment	Relevant vector of spreading
Common Name	Scientific Name	Hard	Soft	Depth (m)		
		• Pylons (concrete and timber) • Reef • Wood	• Sand - medium • Silt • Wood (Mangrove)		Victoria - Port Phillip Bay, Torquay, Western Port Bay, Venus Bay, Cape Liptrap Coastal Park, and Gippsland Lakes	structures (such as sea chests and intake pipes), ballast water.
European Fan Worm	*Sabella spallanzanii*	• Bedrock • Boulder • Cobble • Pylons (concrete and timber) • Reef • Vessel • Wood	• Gravel • Sand - coarse • Sand - fine • Sand - medium • Silt	1-30m	Currently found in Botany Bay and Twofold Bay, (NSW); north coast of Tasmania; Westernport Bay, Victoria; Adelaide region, South Australia and SW Australia.	Ballast water, biofouling.
New Zealand Screw Shell	*Maoricolpus roseus*	• Reef	• Gravel • Sand - coarse • Sand - fine • Sand - medium • Silt	Intertidal zone, <200m	Established throughout eastern and northern Tasmania, the Bass Strait islands, eastern and central Victoria and southern New South Wales.	Ballast water, dry ballast, biofouling.

5.6 CULTURAL HERITAGE VALUES

Cultural heritage can be broadly defined as the legacy of physical science artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations. Cultural heritage includes tangible culture (such as buildings, monuments, landscapes, books, works of art, and artefacts), intangible culture (such as folklore, traditions, language, and knowledge) and natural heritage (including culturally significant landscapes).

This section describes the cultural heritage values of the Operational Area, which is broadly categorised as Aboriginal and non-Aboriginal (maritime archaeology).

5.6.1 ABORIGINAL HERITAGE

Aboriginal people have occupied Gippsland for at least 18,000 years and probably for over 40,000 years (OMV, 2003). The coastline adjacent to the Operational Area is occupied by the *Gunaikurnai* language group, which comprises five distinct clans; the Brataualung, the Brayalaulung, the Tatungalung, the Brabalung and the Krautungalung (Basslink, 2001). Estimates of the number of clanspeople in the *Gunaikurnai* are between 3,000 and 5,000 prior to European contact (Basslink, 2001).

The Gippsland coastline is of significant Aboriginal cultural heritage significance. Coastal fishing is an important part of Aboriginal culture, with fishing methods including hand gathering, lines, rods and reels, nets, traps and spears (DoE, 2015a). The Victorian Aboriginal Heritage Register contains details of Aboriginal cultural heritage places and objects areas along the coastline; however this is not publicly accessible as it contains culturally sensitive information.

There are no indigenous places listed on the Commonwealth Heritage List (DCCEEW, 2021) within the EMBA, those listed are terrestrial and withing a listed place and therefore not impacted by the activity. Other indigenous protected and recognised places are described below.

Indigenous Protected Areas

Indigenous Protected Areas (IPAs) are an essential component of Australia's National Reserve System, which is the network of formally recognised parks, reserves and protected areas across Australia, designed to protect the nation's biodiversity. Indigenous Protected Areas protect cultural heritage into the future, and provide employment, education and training opportunities for Indigenous people in remote areas. There are five IPAs that occur over 100 kilometres from the nearest DA, on and around Flinders Island to the southwest. They are all important rookeries for mutton birds and important cultural resources for Tasmanian Aboriginal people.

In April 2021, the Australian Government committed funding to the Sea Country IPA Program, under which grants will be provided to Indigenous organisations to expand existing IPAs and create new IPAs (DCCEEW, 2023a). The program seeks to increase the area of sea within IPAs in Australia. Ten Sea Country IPA consultation projects were announced in May 2022, including the Nanjit to Mallacoota Sea Country IPA consultation project, which extends from Corner Inlet to the Victoria/New South Wales border (Figure 5.11).

In 2022 the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) signed an agreement with the Australian Government to start the process of establishing the Sea Country IPA and is currently undertaking engagement with families and clans who may have an interest in participating in the development of the IPA (GLaWAC, 2024a). The proposed Sea Country IPA area is illustrated below and is located in coastal waters, including the Gippsland Lakes and estuaries around Mallacoota, not within the Operational Area but within the EMBA.

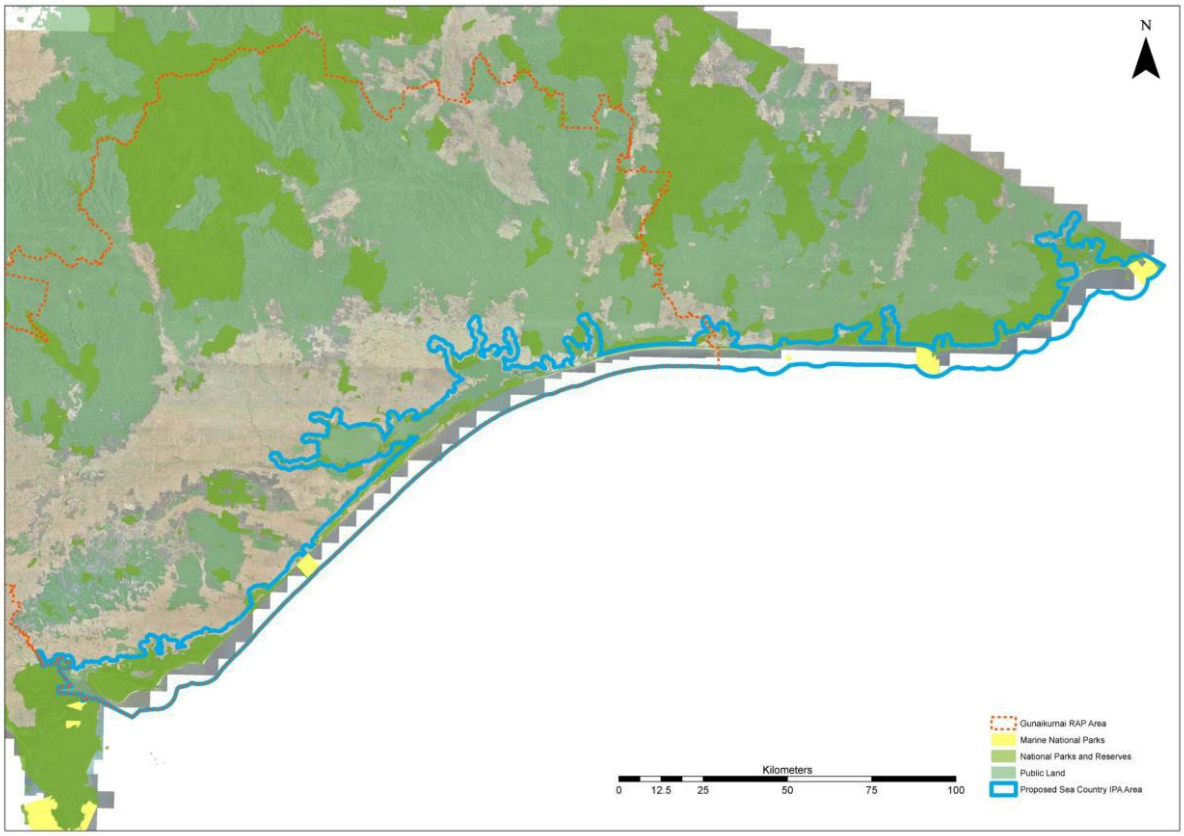


Figure 5.10 Proposed Nanjit to Mallacoota Sea Country IPA

5.6.2 MARITIME ARCHAEOLOGICAL HERITAGE

Shipwrecks (together with their associated relics) over 75 years old are protected within Commonwealth waters under the *Underwater Cultural Heritage Act* 2018 and in Victorian waters under the *Victorian Heritage Act 1995* (Vic).

There are no shipwrecks mapped as occurring in the Operational Area (DoEE, 2019k).

5.7 SOCIO-ECONOMIC ENVIRONMENT

This section describes the social and economic environment of the Operational Area. Given the exclusively offshore nature of the Operational Area and the lack of an oil spill EMBA, the onshore socio-economic environment is only briefly described.

5.7.1 COASTAL SETTLEMENTS

The coastline adjacent to the Operational Area is sparsely populated with the adjoining townships of Golden Beach and Paradise Beach being the closest. These towns are located within the Wellington Shire Council.

The Australian Bureau of Statistics (ABS) indicates that the populations of Golden Beach and Paradise Beach are 293 and 160, respectively. In Golden Beach, 68% of the 461 private dwellings are unoccupied, while 72% of the 308 private dwellings in Paradise Beach are unoccupied.

These towns have very small resident populations, with housing catering primarily to the holiday market, with shacks used by holidaymakers, along with the many vacant blocks used for camping. Camping among the sand dunes is also available along this section of coastline.

5.7.2 NATIVE TITLE

Non-exclusive native title rights and interests that exist over land and water in the EMBA include:

- Rights of access.
- Rights to use and enjoy the land.
- Rights to take resources from the land for non-commercial purposes.
- Rights to protect and maintain sites of importance within the determination area.
- Rights to engage in certain activities on the land (including camping, cultural activities, rituals, ceremonies, meetings, gatherings, and teaching about the sites of significance within the determination area).

These rights do not confer exclusive rights of possession, use and enjoyment of the land or waters.
Native title does not exist in minerals, petroleum or groundwater.

A search of the National Native Title Tribunal (NNTT) database identifies that there is Native Title Determination registered over much of the coastline adjacent to the Operational Area, as well as over the jurisdiction of state waters, this being for the Gunaikurnai People (VCD2010/001). The native title determination area covers approximately 45,000 hectares and extends from west Gippsland near Warragul, east to the Snowy River, and north to the Great Dividing Range, (Figure 5.12). It also includes 200 metres of offshore sea territory between Lakes Entrance and Marlo.

The Gunaikurnai people have occupied, used and managed the coastal land and sea environment along the coastline adjacent to the DA for many thousands of years. These include areas that were dry land before the current sea level stabilised about 5,000 years ago. During the last Ice Age approximately 25,000 years ago, coastlines were on average 125m lower than the present day (UNDRR, 2018).. The Gunaikurnai peoples cultural and spiritual connection with these landscapes continues, even where evidence of previous occupation now lies beneath the ocean (GLaWAC, 2024b).

In the past, coastal wetlands were highly productive areas for hunter-gatherer people, having a variety of habitats and species, so the majority of archaeological sites in Victoria are found within 1 km of the coast (LCC, 1993). Along the Gippsland coast, stone artefacts that have been found were mostly made from silcrete and quartz from the hinterland. Middens on offshore islands indicate that in the past, Aboriginal people from the area now known as Wilsons Promontory were likely to have visited (Jones & Allen, 1979).

The Gunaikurnai people see no distinction between the land and the sea – it is all part of Country (GLaWAC, 2024a). ‘Sea Country’ can include parts of open ocean, beaches, land and freshwater on the coast. It encompasses all living things, beliefs, values, creation spirits and cultural obligations connected to an area (The University of Adelaide, 2023). Water is of particular cultural significance to First Nations people as an integral part of songs, ceremonies, hunting and collecting, and other activities that bind people to their country and each other, including fishing (Smyth, Egan, & Kennett, 2018). Coastal environments are an integrated cultural landscape/seascape that is conceptually very different from the broader Australian view of land and sea. Protecting this cultural heritage is a major concern for First Nation people (National Oceans Office, 2002).

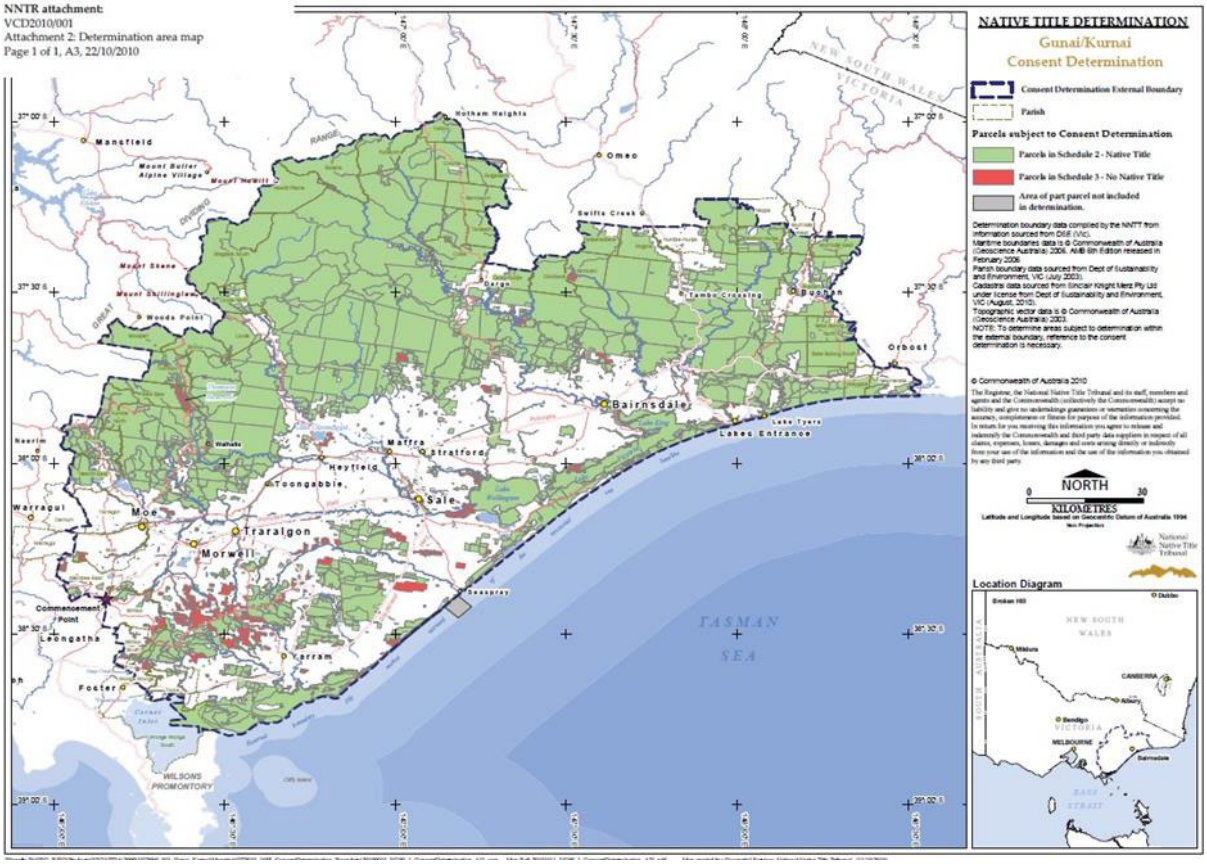


Figure 5.11: Gunaikurnai Native Title Determination Area (VCD2010/01)

5.7.3 COMMERCIAL FISHING

Several Commonwealth and Victorian commercial fisheries are licensed to operate in and around the Operational Area. These are described in the following sections.

5.7.4 COMMONWEALTH MANAGED FISHERIES

Commonwealth fisheries are managed by the AFMA under the *Fisheries Management Act 1991* (Cth). Their jurisdiction covers the area of ocean from 3 nm from the coast out to the 200 nm limit (the extent of the Australian Fishing Zone, AFZ). Commonwealth commercial fisheries with jurisdictions to fish the Operational Area are the:

- Bass Strait Central Zone Scallop Fishery;
- Eastern Tuna and Billfish Fishery;
- Eastern Skipjack Tuna Fishery;
- Southern Bluefin Tuna Fishery;
- Small Pelagic Fishery (eastern sub-area);
- Southern Squid Jig Fishery; and
- Southern and Eastern Scalefish and Shark (SESS), incorporating;
    - Gillnet and Shark Hook sector.
    - South East Trawl sector.
    - Scalefish Hook sector.

According to the WSH-3 PSZ issued by the Victorian Government on 19 June 2008, “all vessels other than vessels operated by authorised persons” are prohibited from entering the PSZ by law. As such, no commercial fishing should occur within the Operational Area. Nevertheless, Table 5.11 summarises the key facts and figures of Commonwealth-managed fisheries with jurisdiction to fish in the waters immediately adjacent the Operational Area.

Table 5-11 Commonwealth-managed fisheries with jurisdiction to fish around the Operational Area

Fishery	Target species	Geographic extent of fishery	Does fishing occur adjacent to the Operational Area?	Fishing season	Fishing methods, vessels and licences	Catch data and other information
Bass Strait Central Zone Scallop Fishery (Figure 5.13)	Commercial scallop (*Pecten fumatus*)	Central Bass Strait area that lies within 20 nm of the Victorian and Tasmanian coasts. Fishery does not operate in state waters. In 2022 fishing was permitted throughout the area of the fishery, except in 4 scallop beds that were closed under the BSCZSF harvest strategy.	**Yes.** According to 2022 season data, the fishing effort was primarily concentrated in Eastern Bass Strait.	12th July to 31st December.	Towed scallop dredges that target dense aggregations ('beds') of scallops. 35 fishing permits are in place. 10 vessels were active in the fishery in 2022, the same number as active in 2021.	• 2022 – 495 tonnes worth $1.4 million. • 2021 – 2,344 tonnes worth $4.4 million. Scallop spawning occurs from winter to spring (June to November), with timing dependent on environmental conditions such as wind and water temperature.
Eastern Tuna and Billfish Fishery (Figure 5.14)	Albacore tuna (*Thunnus alulunga*), bigeye tuna (*T. obesus*), yellowfin tuna (*T. albacares*), broadbill swordfish (*Xiphias gladius*), striped marlin (*Tetrapturus audux*)	Fishery extends from Cape York in Queensland to the South Australian/Victorian border. Fishing occurs in both the AFZ and adjacent high seas.	**No.** The fishery overlaps the Operational Area but is in an area that is not fished.	1 January to 31 December .	Pelagic longline is the key fishing method, with small quantities taken using minor line methods (such as handline, troll, rod and reel). Active vessel numbers were 42 in 2022 (down from about 150 in 2002). No Victorian or Tasmanian ports are used to land catches.	• 2021 – 4,086 tonnes worth $35.6 million. • 2022 – 4,032 tonnes worth $34.7 million. Spawning occurs through most of the year in water temperatures greater than 26°C (Wild Fisheries Research Program, 2012).

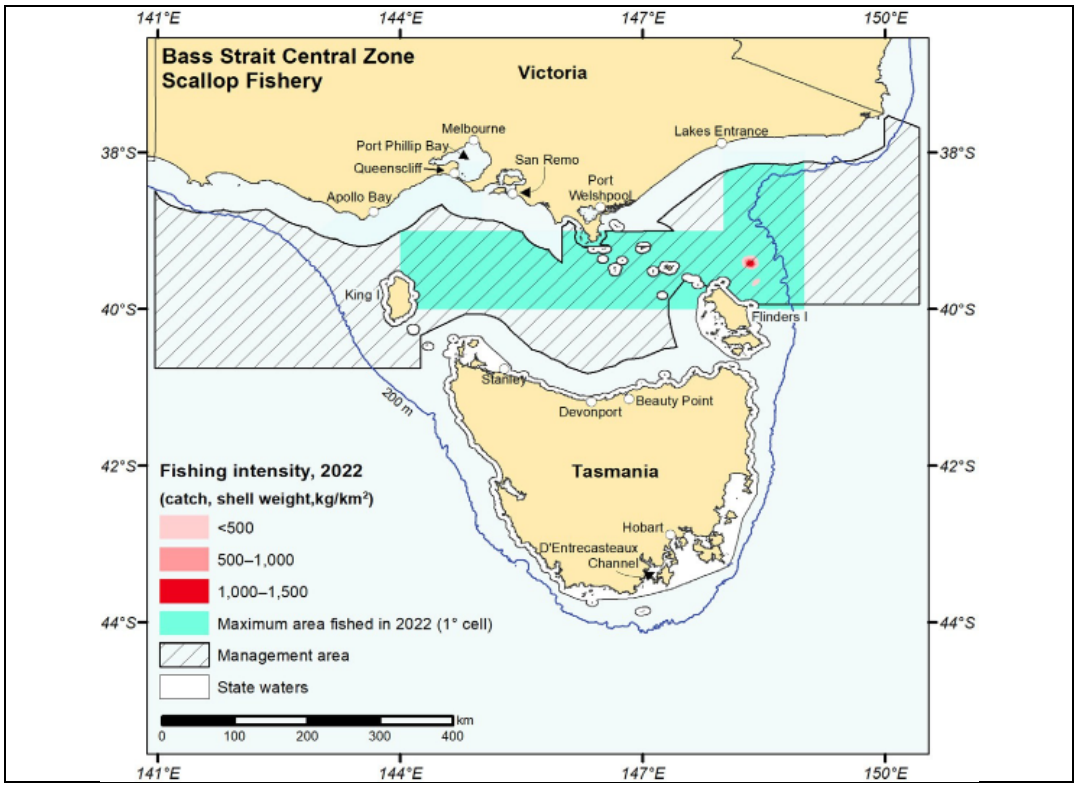
Fishery	Target species	Geographic extent of fishery	Does fishing occur adjacent to the Operational Area?	Fishing season	Fishing methods, vessels and licences	Catch data and other information
Eastern Skipjack Tuna Fishery	Skipjack tuna (*Katsuwonus pelamis*)	Extends from the border of Victoria and South Australia to Cape York, Queensland.	**No.** The fishery is not currently active, as such no fishing is currently being undertaken in this fishery.	Not currently active.	Purse seine fishing gear is used in this fishery. There are 19 permits in the eastern zone, though no vessels currently work the fishery. Port Lincoln was the main landing port until its tuna cannery closed down.	Not currently active.
Southern Bluefin Tuna (Figure 5.15)	Southern bluefin tuna (*Thunnus maccoyii*)	The fishery extends throughout all waters of the AFZ. AFMA manages Southern Bluefin Tuna stocks in Victorian state waters under agreements set up within the OCS (DEH, 2004). The nearest fishing effort is concentrated along the NSW south coast around the 200 m depth contour.	**No.** The fishery overlaps the Operational Area but is in an area that is not fished.	12-month season begins 1st December.	Purse seine catch in the Great Australian Bight for transfer to aquaculture farms off Port Lincoln in South Australia (five to eight vessels consistently fish this area). Port Lincoln is the primary landing port. On the east coast, pelagic longline fishing is the key fishing method. 2021 – 27 active vessels. 2022 – 30 active vessels.	No recent fishing effort in Bass Strait. The latest data for the east coast pelagic longline catches are: • 2021 – 5,646 tonnes worth $35.49 million. • 2022 – 5,972 tonnes worth $35.45 million.

Fishery	Target species	Geographic extent of fishery	Does fishing occur adjacent to the Operational Area?	Fishing season	Fishing methods, vessels and licences	Catch data and other information
Small Pelagic Fishery (eastern and western sub-area) (Figure 5.16)	Australian sardine (*Sardinops sagax*), jack mackerel (*Trachurus declivis*), blue mackerel (*Scomber australasicus*), redbait (*Emmelichthys nitidus*)	Operates in Commonwealth waters extending from southern Queensland around southern Western Australia.	**No.** The fishery overlaps the Operational Area but is in an area that is not fished.	12-month season begins 1st May.	Purse seine and mid-water trawl, with the latter being the main method. Thirty three (33) entities held quotas in 2022-23 using six active vessels. The main landing ports are in New South Wales.	A Total Allowable Commercial Catch (TACC) in recent years has not been reached. Catch values are confidential due to the small number of fishers. • 2021-22 – 19,623 tonnes. • 2022-23 – 21,080 tonnes. Catch values are confidential.
Southern Squid Jig Fishery (Figure 5.17)	Gould's squid (*Nototodarus gouldi*)	The fishery extends from the SA/WA border east to southern Queensland. AFMA does not control squid fishing in Victorian state waters.	**Yes.** From the 2022-2023 season data, fishing appears to occur adjacent to the Operational Area.	1 January to 31 December	Squid jigging is the fishing method used, mainly at night time and in water depths of 60 to 120 m. Lakes Entrance, Portland, Apollo Bay and Queenscliff are the primary landing ports in Victoria. 2021 – 8 active vessels. 2022 – 6 active vessels.	The species' short life span, fast growth and sensitivity to environmental conditions result in strongly fluctuating stock sizes. • 2021 – 982 tonnes worth $3.30 million. • 2022 – 394 tonnes worth $1.86 million.

Fishery	Target species	Geographic extent of fishery	Does fishing occur adjacent to the Operational Area?	Fishing season	Fishing methods, vessels and licences	Catch data and other information
Southern and Eastern Scalefish and Shark (SESS) Fishery						
Shark Gillnet and Shark Hook Sector (Figure 5.18 and Figure 5.19)	School shark (*Galeorhinus galeus*). Gummy shark (*Mustelus antarcticus*) is the key target species, with bycatch of elephant fish (*Callorhinchus milii*), and sawshark (*Pristiophorus cirratus, P. nudipinnis*).	Waters from the NSW/Victorian border westward to the SA/WA border, including the waters around Tasmania, from the low water mark to the extent of the AFZ. Most fishing occurs in waters adjacent to the coastline in Bass Strait, with a low to medium fishing intensity over the Operational Area.	**Yes.** From the 2022-2023 season data, fishing appears to occur adjacent to the Operational Area.	12-month season, beginning 1st May to 30 April.	Demersal gillnet and a variety of line methods. 2022-23 – 73 permits and 87 active vessels. Landing ports in Victoria are Lakes Entrance, San Remo and Port Welshpool.	• 2022-23 – 1,946 tonnes with value not available at time of reporting. • 2021-22 – 2,026 tonnes worth $21.1 million.

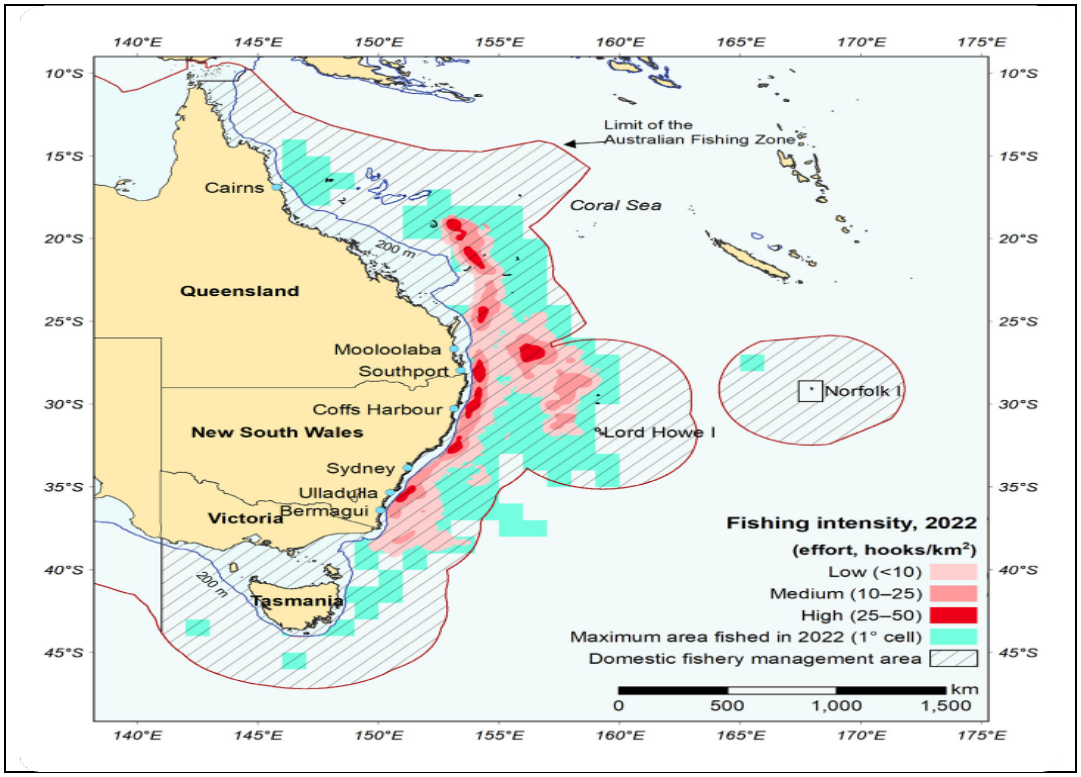
Fishery	Target species	Geographic extent of fishery	Does fishing occur adjacent to the Operational Area?	Fishing season	Fishing methods, vessels and licences	Catch data and other information
Commonwealth Trawl Sector (CTS) (Figure 5.20 and Figure 5.22)	Key species landed are blue grenadier, eastern school whiting (*Sillago flindersi*), tiger flathead (*Neoplatycephalus richardsoni*), orange roughy – eastern zone, and pink ling.	Covers the area of the AFZ extending southward from Barrenjoey Point (north of Sydney) around the New South Wales, Victorian and Tasmanian coastlines to Cape Jervis in South Australia.	**Yes.** From the 2017-2018 season data, fishing appears to occur adjacent to the Operational Area.	12-month season begins 1st May. Highest catches from September to April.	Multi gear fishery, but predominantly demersal otter trawl and Danish-seine methods. Primary landing ports in NSW, and Lakes Entrance and Portland in Victoria. For 2022-23, there were 57 trawl fishing rights, 49 active vessels.	• 2021-22 – 19,501 tonnes worth $80 million. • 2022-23 – 13,381 tonnes, value not available at time of report.
Scalefish Hook Sector (SHS) (Figure 5.21)	Key species landed are pink ling, blue eye trevalla, and ribaldo (*Mora moro*).	Includes all waters off South Australia, Victoria and Tasmania from 3 nm to the extent of the AFZ.	**No.** The location of the Operational Area is outside the area of recent fishing effort.	12-month season begins 1st May. Effort highest from January to July.	Multi gear fishery, using different gear types in different areas or depth ranges. Predominantly demersal longline fishing methods and demersal gillnets. For 2022-23, there were 37 fishing rights, 12 active vessels. Primary landing ports in NSW, and Lakes Entrance and Portland in Victoria.	Catch data is combined with that for the CTS above.

Sources: Patterson et al *(2019, 2018; 2017; 2016).*



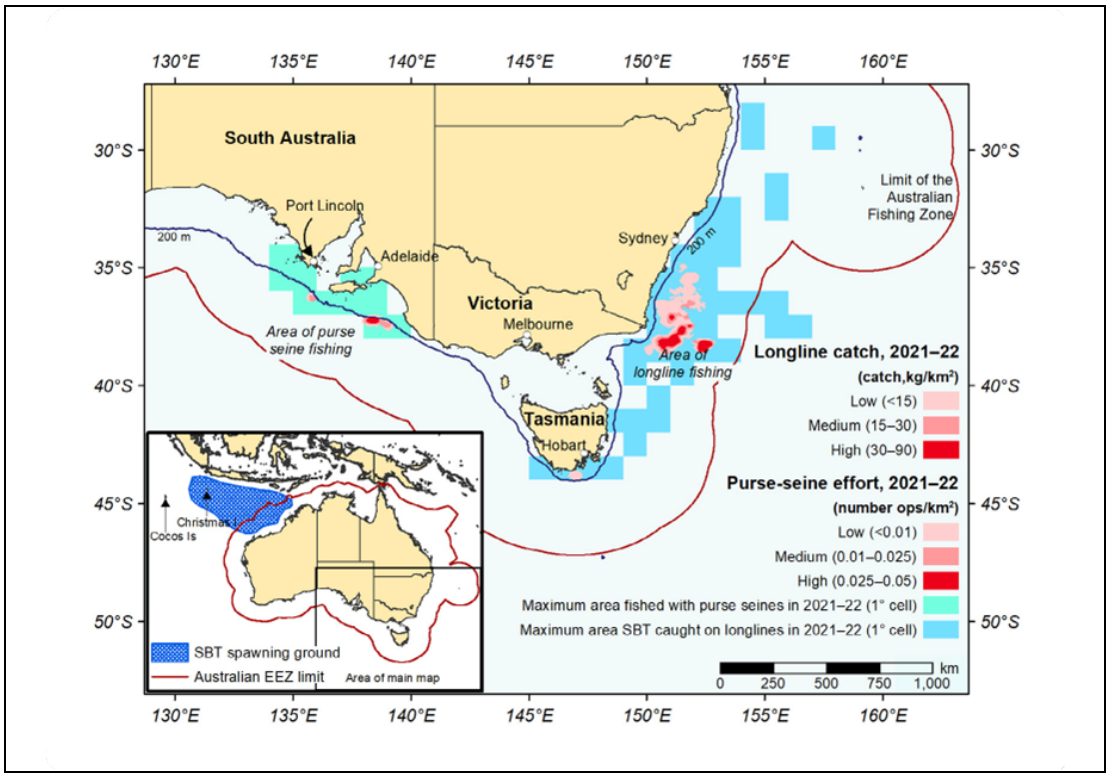
Source: Buttler et al *2023.*

Figure 5.12: Jurisdiction and intensity of the Bass Strait Central Zone Scallop Fishery, 2022



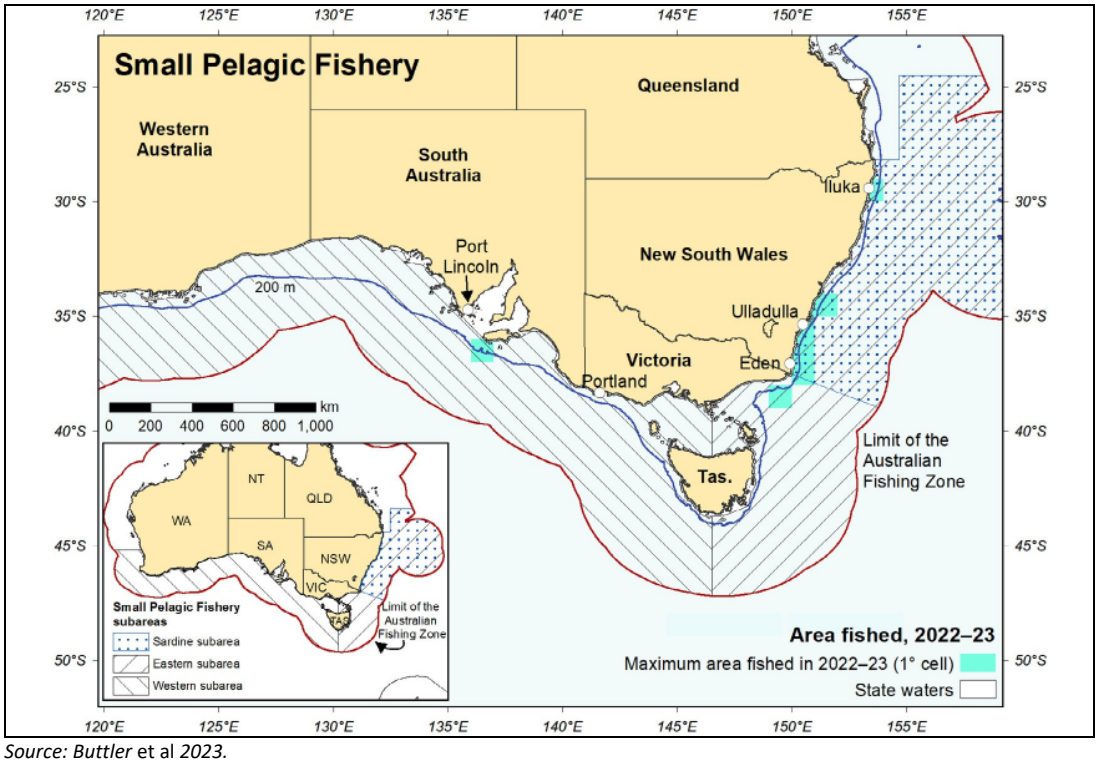
Source: Buttler et al *2023.*

Figure 5.13: Jurisdiction and fishing intensity of the Eastern Tuna and Billfish Fishery, 2022



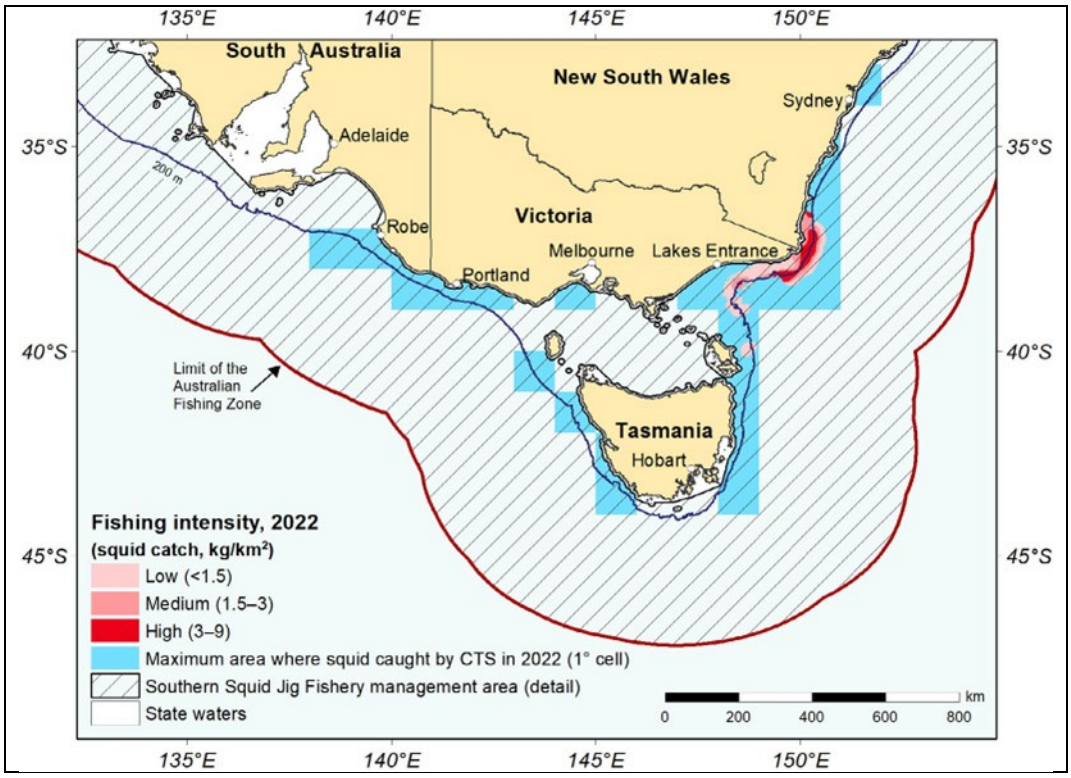
Source: Buttler et al *2023.*

Figure 5.14: Jurisdiction and fishing intensity of the Southern Bluefin Tuna Fishery, 2021-22



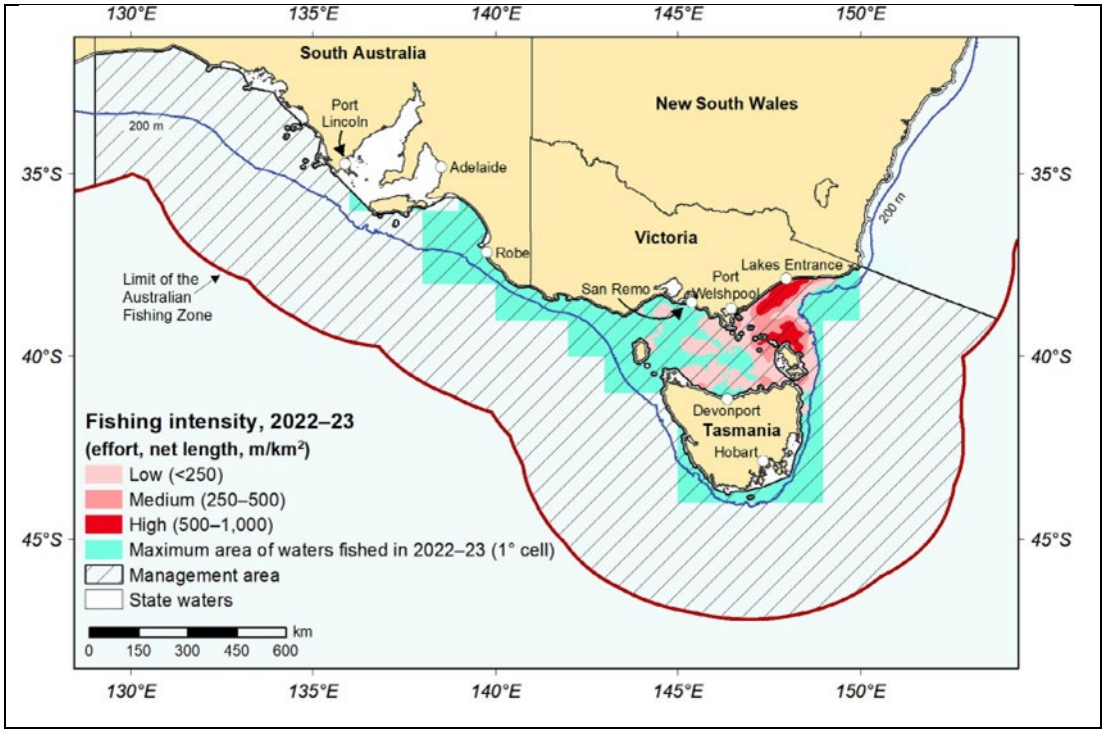
Source: Buttler et al *2023.*

Figure 5.15: Jurisdiction and fishing intensity of the Small Pelagic Fishery, 2022-23



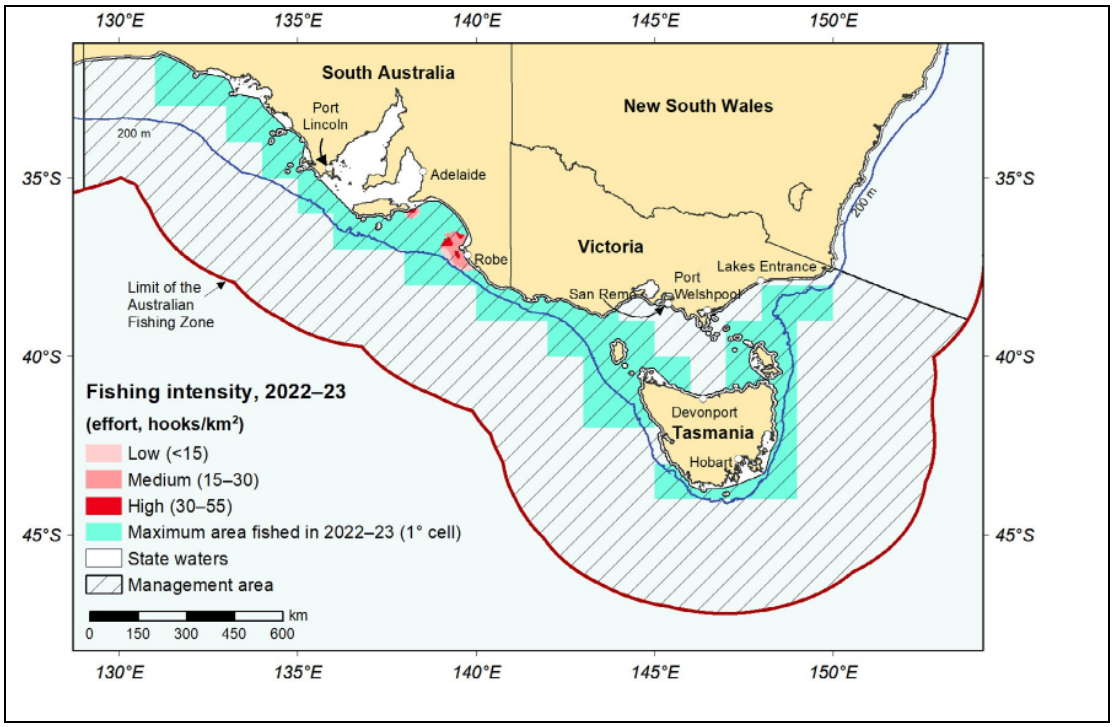
Source: Buttler et al *2023.*

Figure 5.16: Jurisdiction and fishing intensity of the Southern Squid Jig Fishery, 2022



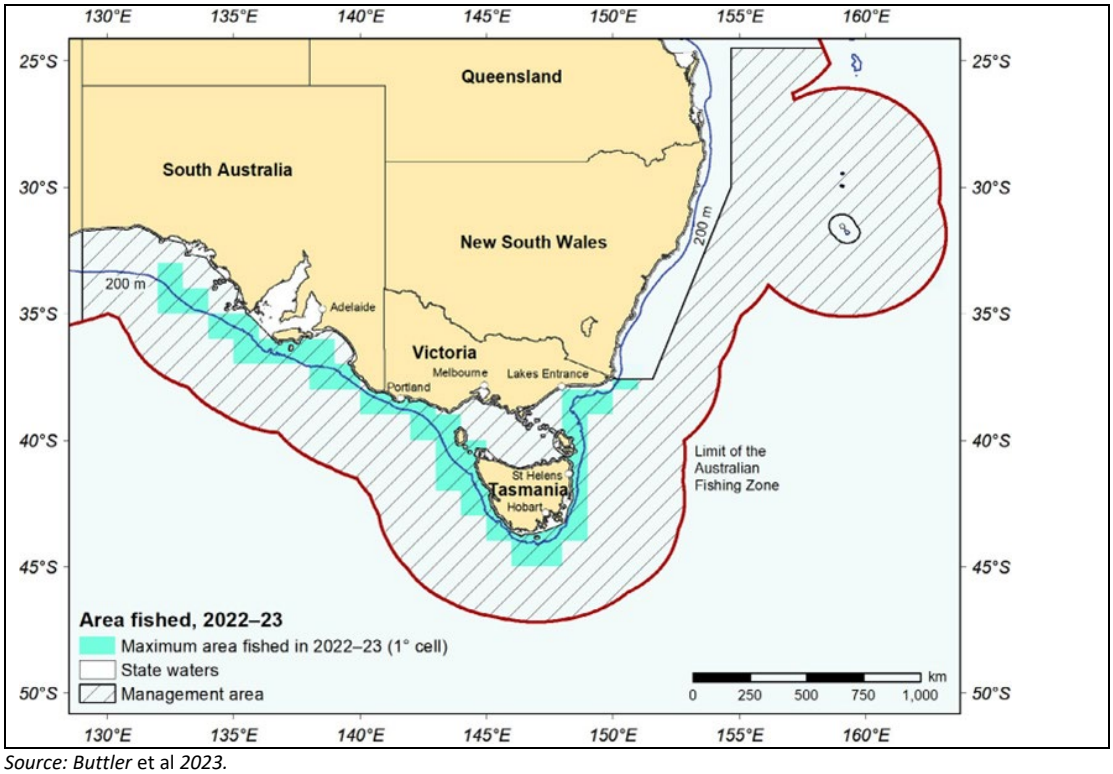
Source: Buttler et al *2023.*

Figure 5.17: Jurisdiction and fishing intensity of the SESS Fishery (Shark gillnet sector), 2022-23



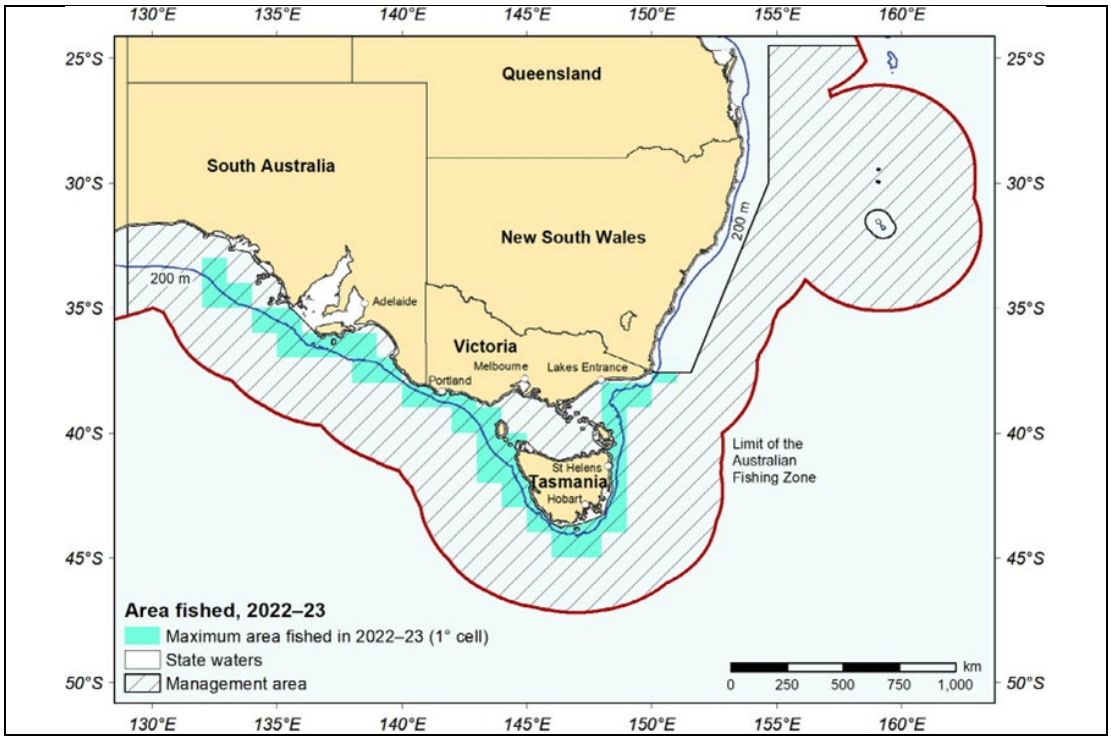
Source: Buttler et al *2023.*

Figure 5.18: Jurisdiction and fishing intensity of the SESS Fishery (Shark Hook Sector), 2022-23



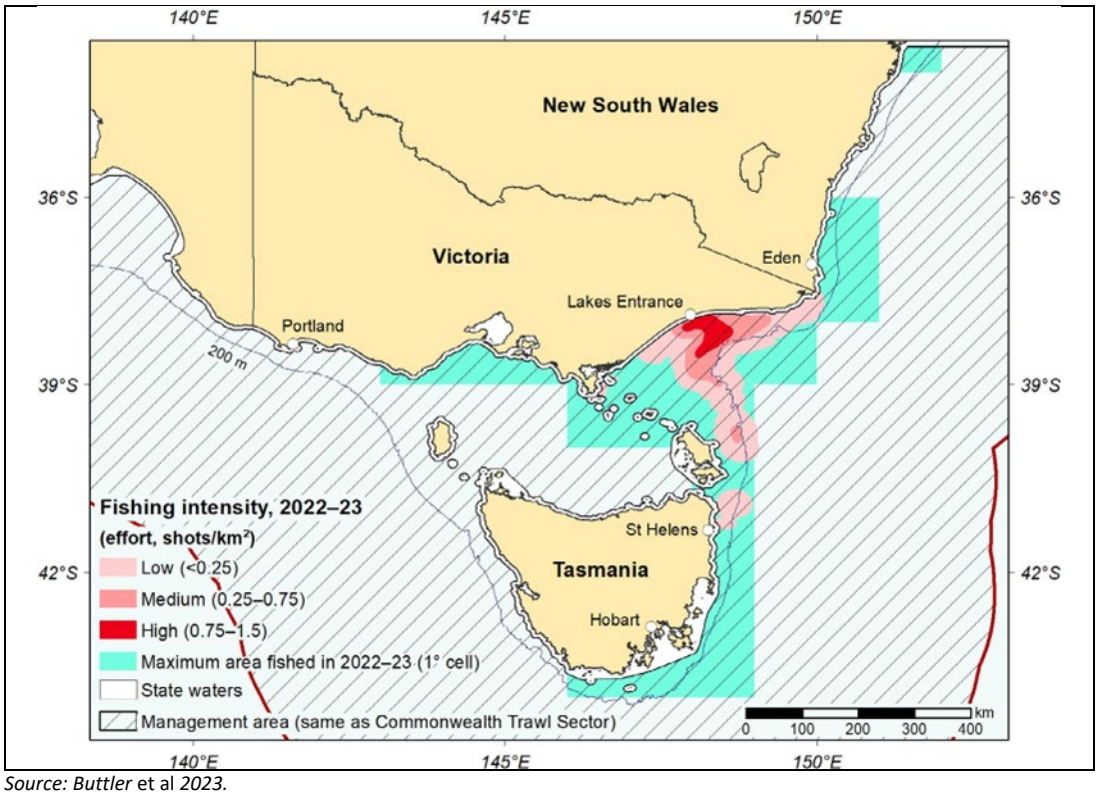
Source: Buttler et al *2023.*

Figure 5.19: Jurisdiction and fishing intensity of the SESS Fishery (Otter Board Trawl), 2022-23



Source: Buttler et al *2023.*

Figure 5.20: Area and fishing intensity of the SESS Fishery (Scalefish hook sector), 2022-23



Source: Buttler et al *2023.*

Figure 5.21: Jurisdiction and fishing intensity of the SESS Fishery (Danish-seine operations), 2022-23 (data combined with the Commonwealth Trawl Sector)

Victorian-managed fisheries

The Operational Area intersects the VFA catch and effort grid cell E40.

Victorian-managed commercial fisheries with access licences that authorise harvest in the waters adjacent to the Operational Area include the following (noting that not all operate in the area):

- Ocean Scallop;
- Rock Lobster (Eastern zone);
- Ocean Access (general, all species);
- Ocean Purse Seine (noted by VFA as being the most active fishery in the region);
- Trawl (inshore);
- Abalone (central zone) (does not operate in the Operational Area);
- Wrasse (does not operate in the Operational Area); and
- Banded Morwong (by permit) (does not operate in the Operational Area).

As noted for the Commonwealth fisheries, the WSH-3 PSZ issued by the Victorian Government on 19 June 2008 prohibits “all vessels other than vessels operated by authorised persons” from entering the PSZ by law. As such, no commercial or recreational fishing should occur within the Operational Area. Nevertheless, Table 5.12 summarises the key facts and figures of the Victorian-managed fisheries with jurisdiction to fish in the waters immediately adjacent the Operational Area.

Table 5-12 Victorian-managed fisheries with jurisdiction to fish around the Operational Area

Fishery	Target species	Geographic extent of fishery	Does fishing occur adjacent to the Operational Area?	Fishing season	Fishing methods, vessels and licences	Catch data and other information
Bass Strait Scallop Fishery (Victorian zone) (Figure 5.13)	Commercial scallop (*Pecten fumatus*) Doughboy scallop.	Extends 20 nm from the high tide water mark of the entire Victorian coastline (excluding bays and inlets where commercial scallop fishing is prohibited).	**Yes.** The Operational Area overlaps the jurisdiction of the fishery, but the dredging technique used for this fishery precludes it operating close to WSH-3.	Determined by AFMA but typically July to 31 December.	Towed scallop dredges (typically 4.5 m wide) that target dense aggregations ('beds') of scallop. A tooth-bar on the bottom of the mouth of the dredge lifts scallops from the seabed and into the dredge basket. Currently there are 444,500 commercial and 455,000 doughboy scallop quota statutory fishing rights, and 10 active boats.	There has been little to no catch around since the zero quota was lifted after the 2012/13 season (due to a lack of commercial scallop quantities). The Total Allowable Commercial Catch (TACC) has been set at 3962 tonnes for 2023. In 2022 the TACC was set at 3905 tonnes and actual catch was a total of 432 tonnes.
Rock Lobster Fishery (eastern zone; Lakes Entrance region)	Southern rock lobster (*Jasus edwardsii*). Very small bycatch of species including southern rock cod (*Lotella* and	The eastern zone stretches from Apollo Bay in southwest Victoria to the Victorian/NSW border.	**Yes.** The Operational Area overlaps the fishery.	Closed season for: • Female: 1 June to 15 November	Fished from coastal rocky reefs in waters up to 150 m depth, with most of the catch coming from inshore waters less than 100 m deep.	In the eastern zone, catches for the last three seasons were: • 2019/20 – 37 t. • 2018/19 – 45 t. • 2017/18 – 57 t valued at $4.67 million.

Figure 5.24)	*Pseudophycis* spp), hermit crab (family *Paguroidea*), leatherjacket (*Monacanthidae* spp) and octopus (*Octopus* spp).			• Male lobsters: 15 September to 15 November. Catches are generally highest from August to January.	Baited pots are generally set and retrieved each day, marked with a surface buoy. The maximum number of licenses are 47 in the eastern zone. Main ports in the Eastern zone	
Abalone Fishery (central zone) (Figure 5.25)	Blacklip abalone (*Haliotis rubra*) is the primary target, with greenlip abalone (*H. laevigata*) taken as a bycatch.	The Victorian Central Abalone Zone is located between Lakes Entrance and the mouth of the Hopkins River. Most abalone live on rocky reefs from the shoreline to depths of 30 m. The WSH-3 well is located in water depth of 39.5m.	**Yes.** The location of the Operational Area is present in the jurisdiction of the fishery.	12-month season, beginning 1st of April.	Abalone diving activity occurs close to shoreline (generally no greater than 30 m) using hookah gear (breathing air supplied via hose connected to an air compressor on the vessel). Commercial divers do not use SCUBA gear. Divers use an iron bar to prise abalone from rocks. As of September 2023, there are 34 fishery access licences in the central zone.	In Victoria the production of abalone was: • 2020/21 – 601t, value $16.8 million. • 2021/22 – 636t, value $17.4 million. In the Central Zone catches were: • 2020/21 – 230t • 2021/22 – 241t For the central zone, the 2023/24 TACC is 213.1 tonnes (blacklip) and 3.4 tonnes (greenlip).
Wrasse Fishery (Lakes Entrance region)	Blue-throat wrasse (*Notolabrus tetricus*), saddled wrasse (*N. fucicola*), orange-	Entire Victorian coastline out to 20 nm (excluding marine reserves, bays and inlets).	**Unknown** Licences were made transferrable	Year-round.	Handline fishing (excluding longline), rock lobster pots (if in possession of a rock	Catches of wrasse in Victoria for the last five reported seasons were: • 2017/18 – 38 t valued at $771,0000. • 2018/19 – 33 t valued at $672,000.

	spotted wrasse (*N. parilus*).	In recent years, catches have been highest off the central coast (Port Phillip Heads, Western Port and Wilson's Promontory) and west coast (Portland).	from 1st April 2017, so fishing effort could be activated in the area.		lobster access fishing licence). Preferred water depths for blue-throat wrasse is 20-40 m, while saddled wrasse prefer depths of 10-30 m. There are 22 fishery access licences.	• 2019/20 – 25 t valued at $487,000. • 2020/21 – 22t valued at $224,000 • 2021/22 – 21t, value not available
Multi-species Ocean Fishery						
Ocean Access (or Ocean General) Fishery	Gummy shark (*Mustelus antarcticus*), school shark (*Galeorhinus galeus*), Australian salmon (*Arripis trutta*), snapper (*Pagrus auratus*). Small bycatch of flathead (*Platycephalidae* spp).	Entire Victorian coastline, excluding marine reserves, bays and inlets.	**Yes.** The location of the Operational Area is present in the jurisdiction of the fishery.	Year-round. Most fishing undertaken off Lakes Entrance occurs between April and July.	Utilises mainly longlines (200 hook limit), but also haul seine nets (maximum length of 460 m) and mesh nets (maximum length of 2,500 m per licence). There are 171 fishery access licences. Fishing usually conducted as day trips from small vessels (<10 m in length).	There is insufficient catch data (catch data is combined with other fisheries and therefore unable to be distinguished on a standalone basis).
Ocean Purse Seine Fishery	Australian sardine (*Sardinops sagax*), Australian salmon (*Arripis trutta*) and sandy sprat (*Hyperlophus vittatus*) are the main species.	Entire Victorian coastline, excluding marine reserves, bays and inlets.	**Yes.** The location of the Operational Area is present in the jurisdiction of the fishery.	Year-round.	Purse seine, which is generally a highly selective method that targets one species at a time, thereby minimising bycatch. Purse seines do not touch the seabed. A	Confidential data (due to operation of only one fisher).

	Southern anchovy (*Engraulis australis*) caught in some years.				lampara net may also be used. Only one licence is active in Victorian waters (based out of Lakes Entrance), with fishing focused close to shore and during the day. This licence is held by Mitchelson Fisheries Pty Ltd, a family business that catches primarily sardines, salmon, mackeral, sandy sprat, anchovy and white bait using the *Maasbanker* purse seine vessel.	
Inshore Trawl Fishery	Key species are eastern king prawn (*Penaeus plebejus*), school prawn (*Metapenaeus macleayi*) and shovelnose lobster/Balmain bug (*Ibacus peronii*). Minor bycatch of sand flathead (*Platcephalus bassensis*), school whiting (*Sillago bassensis*) and	Entire Victorian coastline, excluding marine reserves, bays and inlets. Most operators are based at Lakes Entrance.	**Yes.** The location of the Operational Area is present in the jurisdiction of the fishery.	Year-round, although the majority of prawn fishing occurs in the warmer months up until Easter.	Otter-board trawls with no more than a maximum head-line length of 33 m, or single mesh nets are used. At June 2023, there were 54 fishery access licences holders, and 48 current licenses.	The last reported catch of eastern school prawn in 2015 was 75 t, the largest or the previous 10 years.

	gummy shark (*Mustelusantarcticus*).					
Banded Morwong Fishery	Banded morwong (*Cheilodactylus spectabilis*). Some fish are also landed as byproduct from the Ocean Access Fishery.	Extent is uncertain. The banded morwong is a temperate reef species. The absence of reef in the Operational Area suggests fishing may be limited or non-existent.	**Yes.** The location of the Operational Area is present in the jurisdiction of the fishery.	1 May to 31 January.	Uses large-mesh gillnets.	Total allowable catch (TAC) is 2920 fish Catches: 2020/21 – 1706 fish 2021/22 – 2000 fish 2022/23 – 1873 fish

Sources: VFA (2017; 2018, 2019).

Figure 5.22: Jurisdiction of the Bass Strait Scallop Fishery (Victorian Zone)

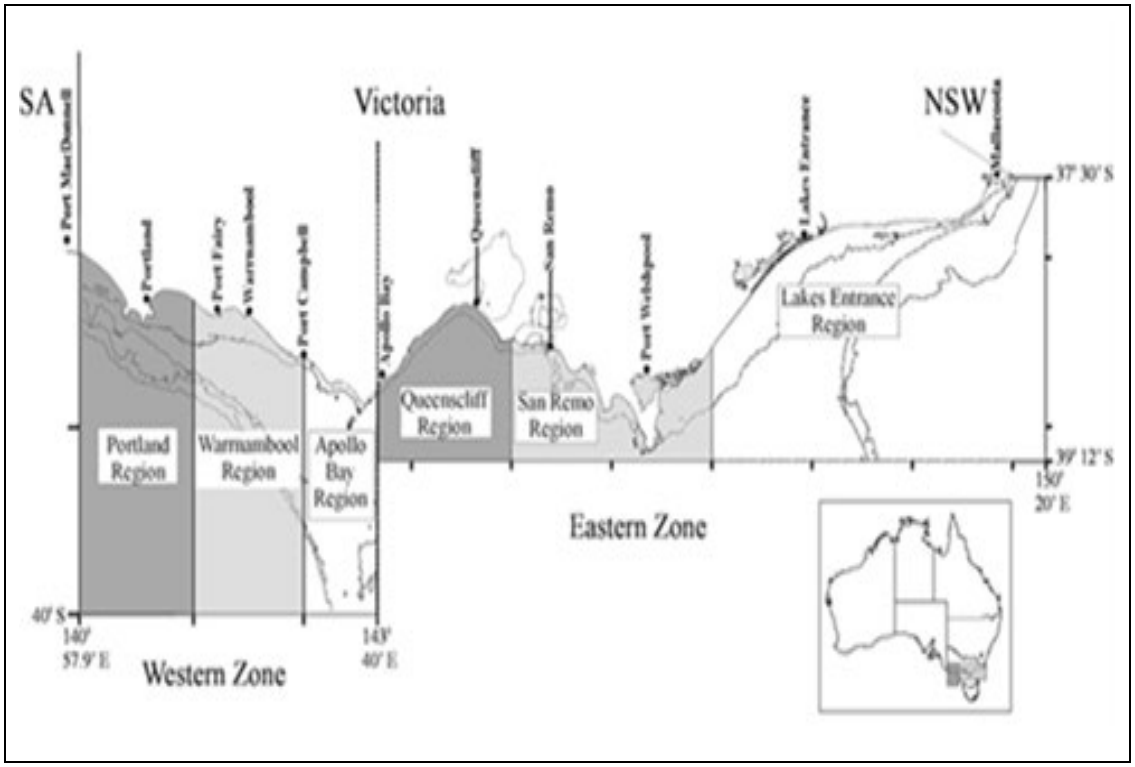


Figure 5.23: Jurisdiction of the Rock lobster fishery (eastern zone, Lakes Entrance region)

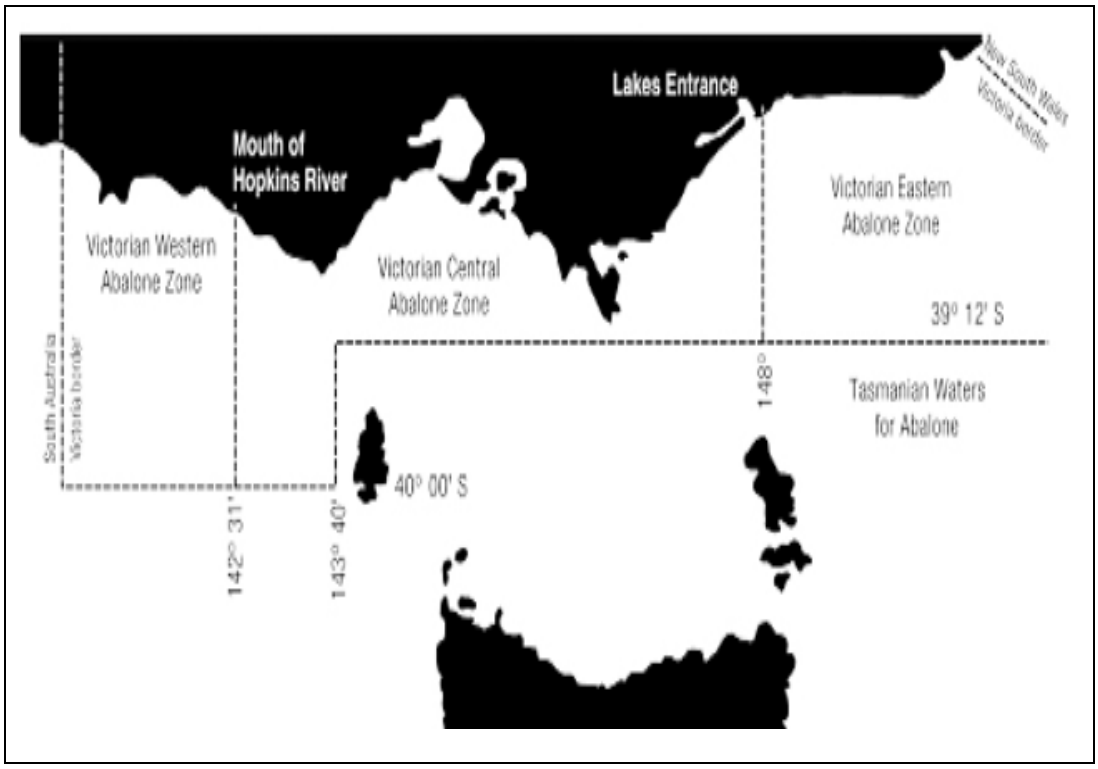


Figure 5.24: Jurisdiction of the Abalone fishery (central zone)

5.7.5 RECREATIONAL FISHING

Recreational fishing along the Gippsland coast typically targets snapper, King George whiting, flathead, bream, sharks, tuna, calamari, and Australian salmon.

Recreational fishing and boating is largely confined to the Gippsland Lakes and nearshore coastal waters. As Bass Strait is relatively shallow, the water currents through the Bass Strait can create unpredictable seas, reducing the numbers of recreational boats from venturing long distances into the Bass Strait from shore. VRFish has stated that small boats are likely to fish around the nearshore reef areas, while larger game fishing boats are likely to fish further out to sea and use nearby ports and boat ramps for launching.

There are no boat ramps adjacent to the Operational Area, though stakeholder consultation indicates that recreational fishers often carry small 'tinnies' (aluminium-hulled boats) over the sand dunes in order to access the beach, with the sand dune clearing for the ROS at Delray Beach providing one of the more suitable access points.

As noted, the WSH-3 PSZ prohibits unauthorised vessels from entering the safety zone by law and as such recreational fishing should not occur within the Operational Area (noting that recreational fishers are unlikely to be aware of the PSZ).

5.7.6 TOURISM

Marine-based tourism and recreation in the Bass Strait is primarily associated with recreational fishing and boating (see previous section).

The Gippsland Lakes (comprising Lake Victoria, Lake King, and Lake Wellington, together with other smaller lakes, marshes and lagoons) are the primary tourist attraction in the region. The communities adjacent to this network of lakes are popular tourist towns for their boating and fishing activities, along with bushwalking, bird watching and other nature-focused activities. Towns including Lakes Entrance, Metung, Loch Sport, Golden Beach and Lake Tyers are especially popular in summer.

5.7.7 PETROLEUM INFRASTRUCTURE, EXPLORATION AND PRODUCTION

In 2018, Victoria accounted for 17% of Australia's petroleum liquids production (APPEA, 2017). However, production has been trending down since it peaked in 2000. Victoria accounted for 10% of Australia's conventional gas production in 2018, most of which is from the Gippsland Basin (APPEA, 2019). Both oil and gas production from the Gippsland Basin are in decline.

The Gippsland Basin has 24 offshore production licenses, 5 exploration permits and 5 retention leases (NOPTA, 2019) and a total of 22 offshore petroleum production platforms have been installed in Bass Strait since first production was established in the 1960s (excluding subsea production wells) (Figure 5.26).

The TasGas pipeline, a pipeline that provides gas from Victoria to Tasmania, is located 26 km southwest of the Operational Area (it makes landfall just east of Seaspray, on the eastern edge of the Gippsland Lakes).

Petroleum production from the offshore Gippsland Basin is centred on production from the EARPL oil and gas fields, operator for the Gippsland Basin Joint Venture. EARPL produces oil and gas from 23 platforms and subsea developments, hundreds of wells and some 600 km of associated subsea pipelines, tied back to the Longford Gas Plant and Long Island Point. Production first commenced in 1969 from the Barracouta field. The latest fields to come into production were the Kipper-Tuna-Turrum oil and gas fields in 2013.

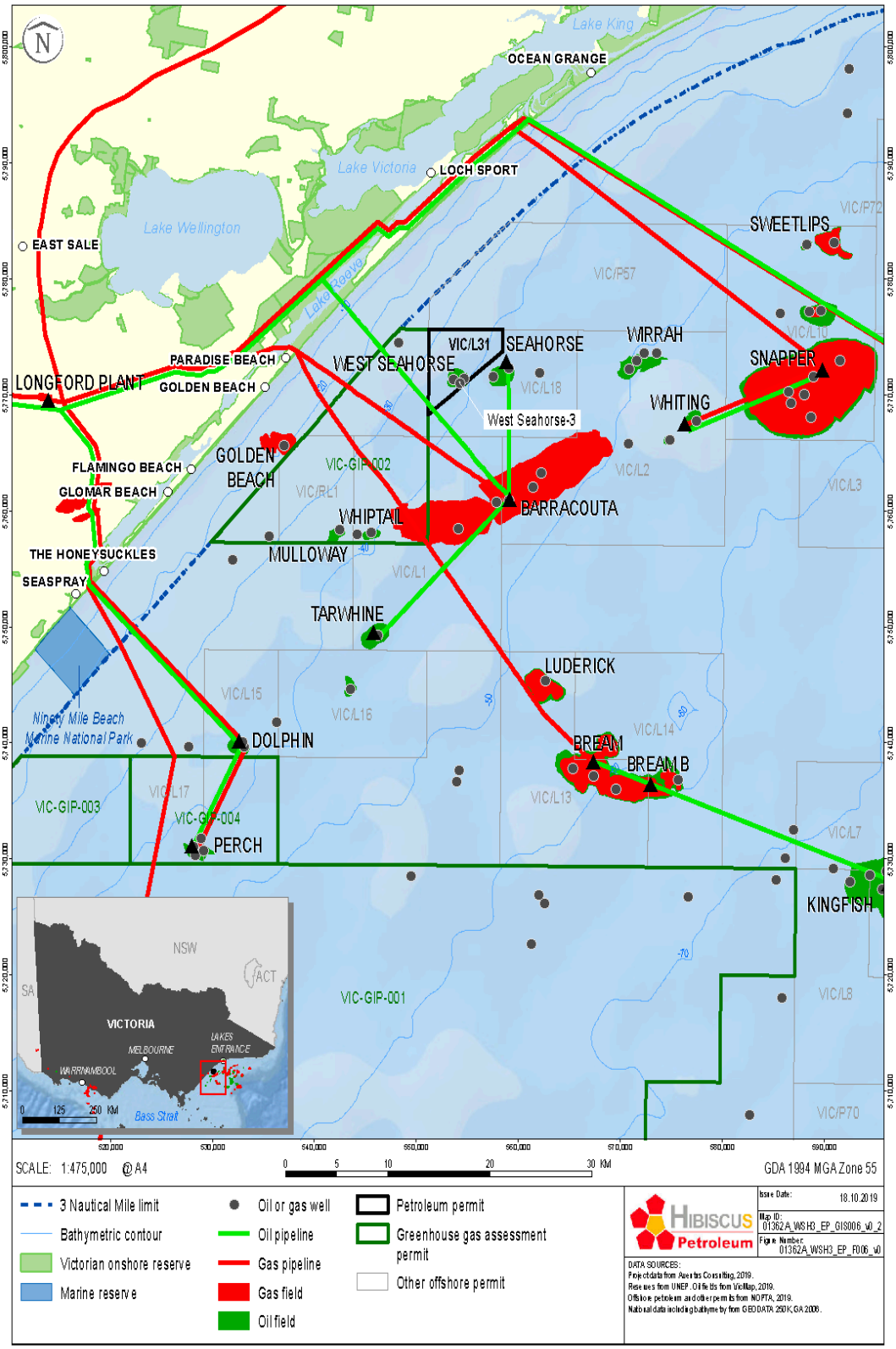


Figure 5.25: Petroleum infrastructure and development in the Gippsland offshore region

5.7.8 COMMERCIAL SHIPPING

The South-east Marine Region (which includes Bass Strait) is one of the busiest shipping regions in Australia (DoE, 2015a). Shipping consists of international and coastal cargo trade, passenger services and cargo and vehicular ferry services across Bass Strait (DoE, 2015a). Lakes Entrance is an important fishing port for the region (DoE, 2015a).

The Operational Area is located entirely within the Bass Strait 'Area to be Avoided' (ATBA) (Figure 5.27). This area is a routing measure that ships in excess of 200 gross tonnes should avoid due to the high concentration of offshore petroleum infrastructure (oil and gas platforms and pipelines, as described in Section 5.7.7) that can provide a navigational hazard. The total area of the ATBA is 5,650 km^2. Operators of vessels greater than 200 gross tonnes must apply to NOPSEMA to enter and be present within the ATBA (NOPSEMA, 2016).

AMSA has indicated that high traffic volume shipping areas are located south of the Operational Area (see Figure 5.27). AMSA has provided historic AIS traffic plot based off data collected between January 2016 and January 2017 (excludes small domestic commercial vessels such as fishing trawlers and coastal craft).

It indicates very light shipping activity occurs through the Operational Area, with higher traffic volume shipping areas located to the south of the Operational Area and immediately south of the ATBA. AMSA advises that interactions between the source vessel and large commercial ships is expected to be minimal due to the ATBA.

To the immediate seaward side of the ATBA exist two traffic separation schemes, implemented by AMSA to enhance safety of navigation around the ATBA by separating shipping into one-direction lanes for vessels heading northeast and those heading southwest.

One separation area is located south of Wilson's Promontory, and the other south of the Kingfisher B platform (DIBP, 2017), 66 km southeast of the Operational Area.

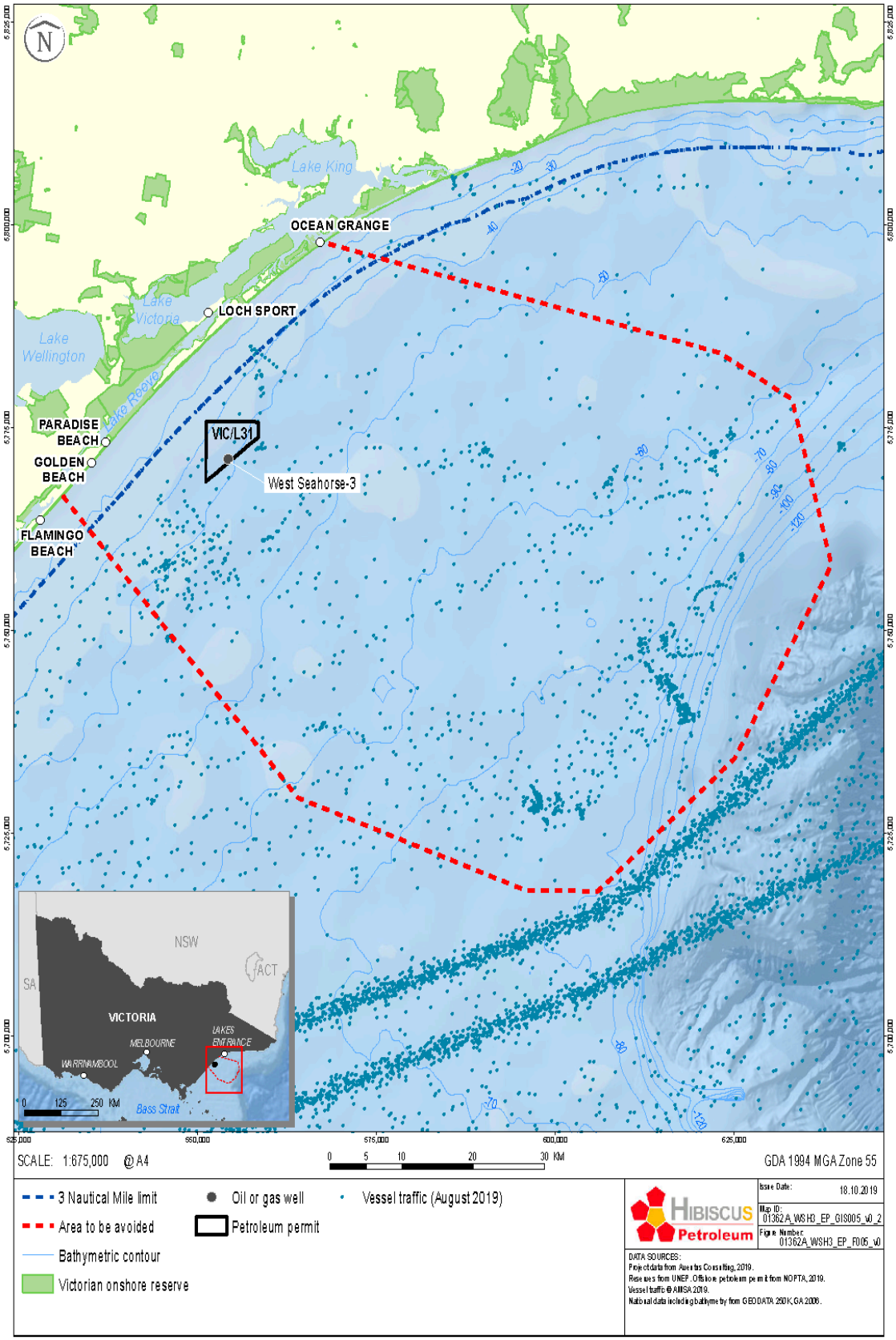
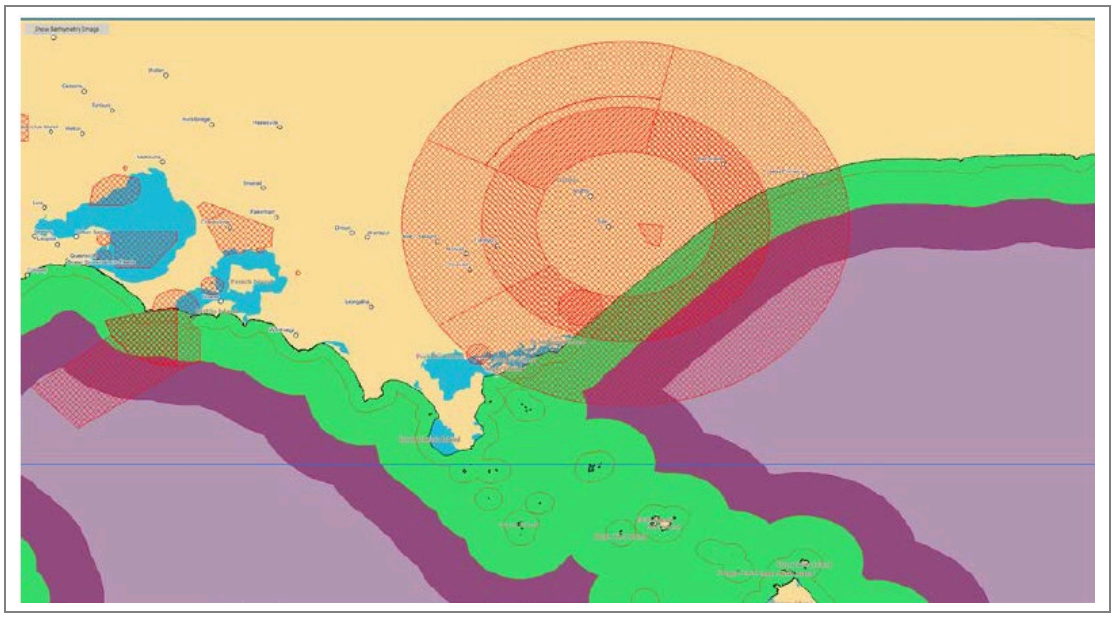


Figure 5.26: Commercial shipping traffic adjacent to the VIC/L31 permit

5.7.9 DEFENCE ACTIVITIES

Defence activities that may take place in the region include transit of naval vessels, training exercises, hydrographic survey, surveillance and enforcement, and search and rescue. There are no defence training areas within the EMBA (DoE, 2015a). The Operational Area is located beneath Defence Restricted Airspace R258D (Figure 5.28), with no records of unexploded ordinance in or around the Operational Area.

A geotechnical and geophysical survey was conducted in 2007 prior to the drilling of WSH-3 and Wardie-1 and the data used to characterise the seabed around the well site as relatively flat and featureless on a sandy seabed with localised depressions in water depths of approximately 38 – 40 m (Fugro, 2007). At the time of the survey in 2007, there was no debris or unexploded ordinates evident at the WSH-3 location.



Source: AMSIS (2017).

Figure 5.27: Restricted airspace over the Operational Area

6 IMPACT AND RISK ASSESSMENT METHODOLOGY

This section describes the environmental impact and risk assessment methodology employed in this EP in accordance with Regulation 21(5) of the OPGGS(E). CHPL, as a wholly owned subsidiary of HPB, uses the HPB HSEQ Procedure *Hazard Identification and Risk Management* (HPB-HSEQ-GEN-PCD01) for undertaking risk assessments; this methodology is explained in detail here.

HPB's risk management process aligns with the principles of ISO 31000:2009 *Risk Management – Principles and Guidelines*. This process is consistent with the steps outlined below and is illustrated visually in Figure 6-1. Each step in this risk assessment process is described in this section.

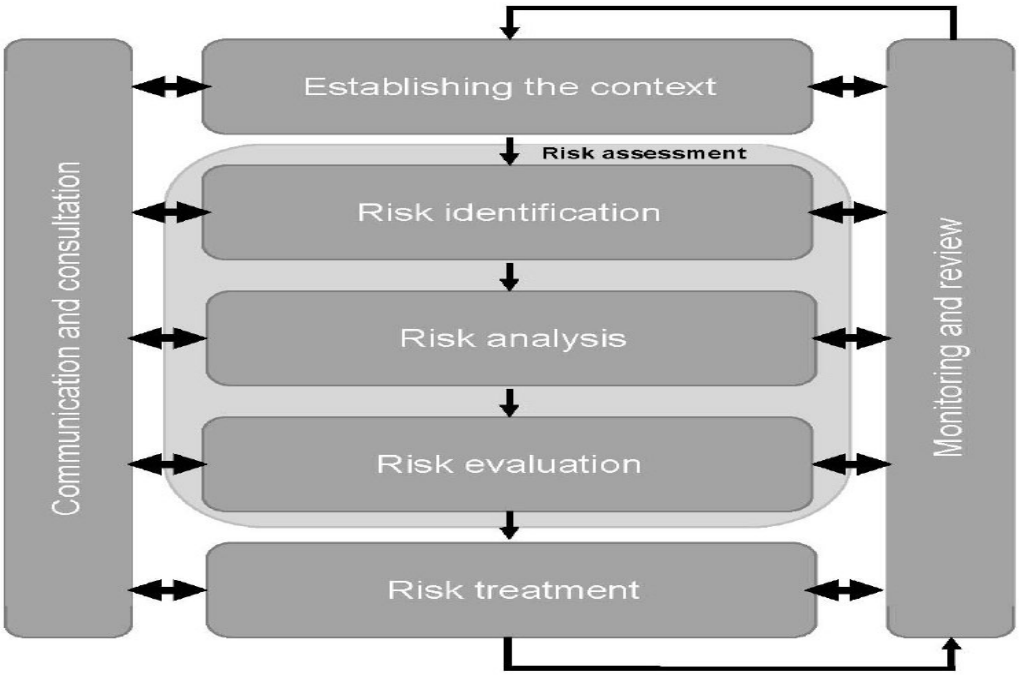


Figure 6.1: ISO 31000 Risk Management Process

6.1 COMMUNICATE AND CONSULT

In accordance with Regulation 22(15) of the OPGGS(E) and Regulations 24 and 25 of the OPGGS Regulations, CHPL has consulted with relevant persons (stakeholders) in the development of this EP to determine whether their functions, activities and interests are impacted by, or may impact on the decommissioning activities for the WSH-3 well or removal of the Wardie-1 conductor. The relevant persons consultation process is described in Section 4.

6.2 ESTABLISH THE CONTEXT

The first step in the risk assessment process is to establish the context. This involves:

- Understanding the regulatory framework in which the activity takes place (described in the 'Legislation and Guidelines' in Section 3);
- Defining the activities that will cause impacts and create risks (outlined in the 'Activity Description' in Section 2);

- Understanding the concerns of stakeholders and incorporating those concerns into the design of the activity where appropriate (outlined in Section 4, 'Stakeholder Consultation'); and
- Describing the environment in which the activity takes place (the 'Existing Environment' is described in Section 5).

Once the context has been established, the hazards of the activity can be identified, along with the impacts and risks of these hazards. This process is described in following sections.

6.3 IDENTIFY THE RISKS

The HBP HSEQ Procedure describes the following steps when identifying hazards:

- Identify the activities and the potential impacts associated with them;
- Identify the sensitive environmental resources at risk within and adjacent to the operational area;
- Identify the environmental consequences of each potential impact, corresponding to the maximum reasonable impact;
- Identify the likelihood (probability) of occurrence of each potential environmental impact (i.e., the probability of the event occurring);
- Identify applicable control measures; and
- Assign a level of risk to each potential environmental impact using a risk matrix.

In accordance with this framework, all risks must be reduced to a level that is considered to be ALARP (see Section 6.5.1) and acceptable.

Risk identification and assessment was undertaken to examine the environmental hazards and their associated impacts and risks arising from the WSH-3 activity, which are assessed throughout Section 7 and 8.

6.3.1 DEFINITIONS

For context, Table 6-1 provides the definitions of impacts and risk according to the OPGGS(E) and OPGGS Regulations and international risk management standards.

The OPGGS(E) Regulations 21(5)(6) require that the EP detail and evaluate the environmental impacts and risks for an activity, including control measures used to reduce the impacts and risks of the activity to ALARP and an acceptable level. This must include impacts and risks arising directly or indirectly from all activity operations (i.e., planned events) or potential emergency or incident conditions (i.e., incident events).

NOPSEMA distinguishes between environmental impacts and risks. Environmental impact is defined in Table 6-1.

Table 6-1 Definitions of impact and risk

Source	Impact	Risk
OPGGS(E)	Any change to the environment, whether adverse or beneficial, that wholly or partially results from an activity.	Not defined.
ISO AS/NZS31000: 2018 (Risk management – Principles and guidelines)	Not defined.	The effect of uncertainty on objectives.

ISO AS/NZS 14001: 2016 (Environmental management systems – Requirements with guidance for use)	Not defined.	The effect of uncertainty on objectives.
ISO AS/NZS 4360: 2004 (Risk management)	Not defined.	The chance of something happening that will have an impact on objectives.
HB203: 2012 (Managing environment-related risk)	Any change to the environment or a component of the environment, whether adverse or beneficial, wholly or partly resulting from an organisation's environmental aspects.	The effect of uncertainty on objectives. The level of risk can be expressed in terms of a combination of the consequences and the likelihoods of those consequences occurring.

For this activity, CHPL has determined that impacts and risks are defined as follows:

Impacts result from planned events

There will be consequences (known or unknown) associated with the event occurring. Impacts are an inherent part of the activity. For example, there is displacement of third-party marine users due to the presence of the PSZ.

For impacts, only a consequence is assigned in this EP (likelihood is irrelevant given that the event does occur) (as defined in Table 6-2).

Risks result from unplanned events

There may be consequences if an unplanned event occurs. Risks are not an inherent part of the activity. For example, if the PSZ is ignored/breached, fishing equipment used in trawling activities may be damaged by the wellhead, but this is not a certainty. The risk of this event is determined by multiplying the consequence of the impact by the likelihood of this event (Table 6-3) happening.

For risks, the consequence and likelihood are combined to determine the risk rating (Table 6-4).

6.4 ANALYSE THE RISKS

After the impacts and risks have been identified, environmental performance outcomes (EPO) (or objectives) are developed to provide a measurable level of performance for each environmental hazard to ensure that the environmental impacts and risks are managed to be ALARP and acceptable. EPO are assigned in Section 7 and 8 for the impacts and risks relevant to this activity.

6.5 EVALUATE THE RISKS

The purpose of impact and risk evaluation (herein referred to simply as risk assessment) is to assist in making decisions, based on the outcomes of analysis, about the sorts of controls required to reduce an impact or risk to ALARP. Planned and unplanned events are subject to risk assessment in the same manner.

CHPL's risk assessment process is described below and was followed in the risk identification and assessment session described in Section 6.3:

- Identify and describe the risks (see Section 7);

- Determine the maximum credible consequence (to the natural environment and community/social/cultural heritage) arising from the impact or risk without introducing additional controls. This determination is provided in the risk assessments in Section 7;
- Adopt controls for each impact or risk;
- Undertake an assessment of the consequence of the impact or risk, corresponding to the maximum credible impact across the consequence categories (see Table 6-2) considering the controls identified and their effectiveness;
- Identify the likelihood of occurrence of those consequences ('remote' through to 'very likely'), considering the controls identified and their effectiveness, as outlined in Table 6-3; and
- For risks, multiply the consequence and likelihood to determine the overall risk ranking, outlined in Table 6-4 (with Table 6-5 describing the risk bands).

Table 6-2 HPB definition of consequence

Risk Focus	Negligible	Minor	Moderate	Major	Severe	Catastrophic
Financial	Less than $1M	Loss from $1-$2M	Loss from $2 to $10M	Loss from $10M to $20M	Loss from $20M to $50M	Loss >$50M
Social	Minor, temporary impact to a community or areas/items of cultural significance	Minor, short-term (<5 years) impact to a community or areas/items of cultural significance	Moderate medium term (5 to 10 years) impact to a community or highly valued areas/assets/items of cultural significance	Major long-term (10 years) impact to a community or social infrastructure or highly valued areas/items of cultural significance	Serious, long-term (>10 years) impact to the community, social infrastructure or highly valued areas/items of significance	Permanent long-term impact to a community or social infrastructure or highly valued areas/items of international cultural significance
Reputational	No impact	Short-term local concern	National bad mention short-term concern, scrutiny of asset	Significant impact, national media coverage, operations restricted or curtailed	Persistent national concern, operations severely restricted	International media coverage, Company at stake
Environ-mental	Slight and temporary <1 year – localised effect on ecosystem, species or habitat	Minor short-term (1 to 2 years) impacts but not affecting ecosystem or function	Moderate, medium term (2 to 5 years) impacts but not affecting ecosystem function	Major long term (5 to 10 years) impact on ecosystems, species or habitat	Serious long term (> 10 years) impact on highly valued ecosystems, species or habitat	Permanent impact on highly valued ecosystems or habitat

Risk Focus	Negligible	Minor	Moderate	Major	Severe	Catastrophic
Health and Safety	First aid treatment	Medical treatment	Alternative duties/restricted work	Lost time injury – partial disability	Single fatality – permanent disability	Multiple fatalities

Table 6-3 HPB definition of likelihood

Likelihood	Definition
Very likely	Expected to occur in most circumstances (multiple occurrences in a year)
Likely	Could occur in most circumstances (happens at least once a year)
Possible	Has occurred previously in HPB or on HPB site or project
Unlikely	Has occurred many times in industry but not within HPB
Highly unlikely	Has occurred once or twice in industry
Remote	Theoretically possible but not occurred yet in industry

Table 6-4 HPB risk assessment matrix

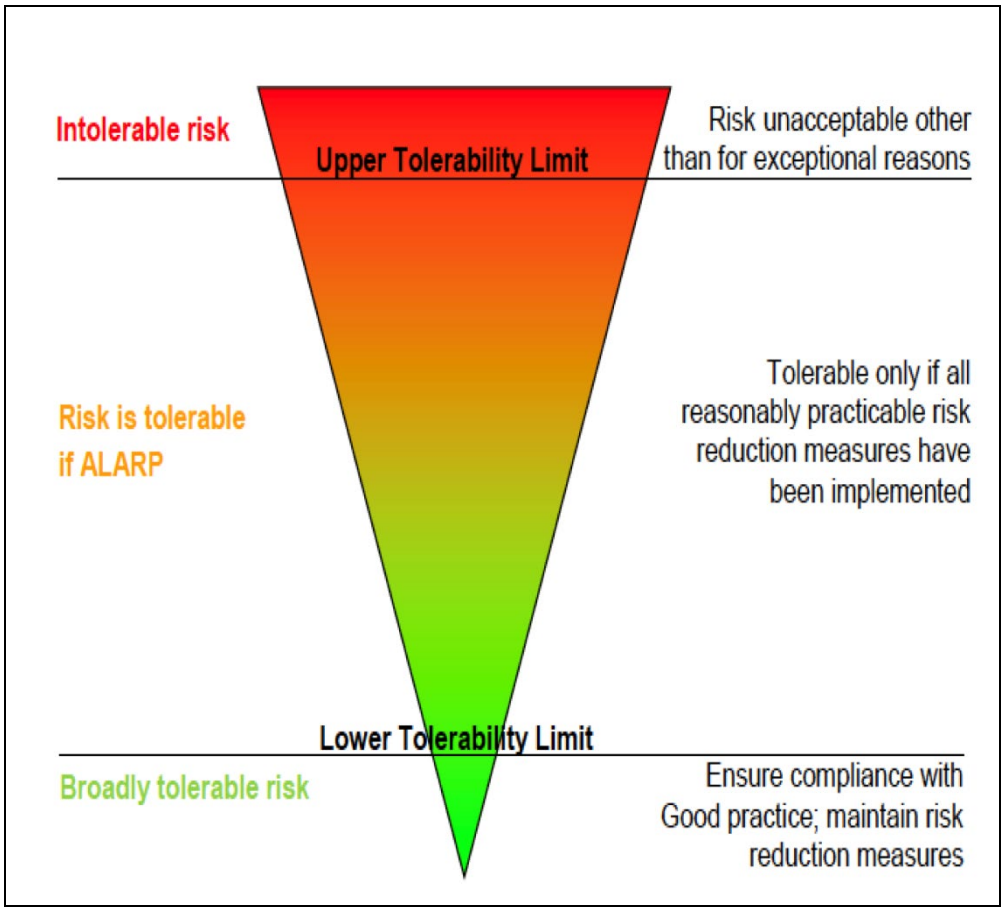
		Consequence					
		Negligible	**Minor**	**Moderate**	**Major**	**Severe**	**Catastrophic**
Likelihood	**Very likely**	Medium	High	Very high	Very high	Severe	Severe
	Likely	Medium	High	High	Very high	Very high	Severe
	Possible	Low	Medium	High	High	Very high	Very high
	Unlikely	Low	Medium	Medium	High	High	Very high
	Highly unlikely	Low	Low	Medium	Medium	High	High
	Remote	Low	Low	Low	Low	Medium	Medium

Table 6-5 HPB risk bands

SEVERE	Unacceptable risk. Immediate action required; operations to cease immediately until activity has been re-planned and risk has been reduced to ALARP and HPB has approved. Short-term reduction to reduce the risk level to be put in place immediately, individual removed from the exposure. Identify additional or alternative permanent risk reduction measure to be implemented as a matter of high priority.
VERY HIGH	Take action to reduce residual risk to lower level by a Risk Treatment Plan to be developed immediately and managed by HPB Senior Management.
HIGH	Risk reduction measures to be implemented as a matter of urgency. HPB Operations Management must approve activities in this band.
MEDIUM	Risk reduction measures to be included in this continuous improvement process. Site supervisors may approve activities in this band.
LOW	Broadly acceptable. Activity can proceed under normal site supervision with standard task risk assessment processes and site operating procedures.

6.5.1 DEMONSTRATION OF ALARP

The ALARP principle states that it must be possible to demonstrate that the cost involved in reducing the risk further would be grossly disproportionate to the benefit gained. The ALARP principle arises from the fact that infinite time, effort and money could be spent attempting to reduce an impact or risk to zero. This concept is shown diagrammatically in Figure 6-2.



Source: CER (2015).

Figure 6.2: The ALARP Principle

CHPL's approach to demonstrating ALARP includes:

- Systematically identify and assess all potential environmental impacts and risks associated with the activity;
- Where relevant, apply industry 'good practice' controls to manage impacts and risks;
- Assess the effectiveness of the controls in place and determine whether the controls are adequate according to the 'hierarchy of control' principle; and
- For higher order impacts and risks, implement further controls if feasible and reasonably practicable to do so.

NOPSEMA's *Environment Plan Decision Making Guideline* (N04750-GL1721, A524696, January 2024) states that in order to demonstrate ALARP, it needs to be clear from the information provided in the EP that the costs of implementing any further control measures to reduce risks would be grossly disproportionate to the benefits to the environment that could be gained. Once this point is reached all impacts and risks are

considered ALARP.

There is no universally accepted guidance to applying the ALARP principle to environmental assessments. For this EP, the guidance provided in NOPSEMA's *Environment Plan Decision Making Guideline* has been applied and augmented where deemed necessary.

The level of ALARP assessment is dependent upon the:

- Residual impact and risk level (high versus low); and
- The degree of uncertainty associated with the assessed impact or risk.

An iterative risk evaluation process is employed until such time as any further reduction in the residual risk ranking is not reasonably practicable to implement. At this point, the impact or risk is reduced to ALARP. The determination of ALARP is outlined in Table 6-6.

Table 6-6 Alignment of ALARP with impacts (using consequence ranking) and risks (using risk ranking)

Consequence ranking	Negligible	Minor	Moderate	Major	Severe/Catastrophic
ALARP level – planned event	Broadly acceptable		Tolerable if ALARP	Intolerable	
Residual impact category	Lower order			Higher order	
Risk ranking	Low	Medium	High	Very high	Severe
ALARP level - unplanned event	Broadly acceptable		Tolerable if ALARP	Intolerable	
Residual risk category	Lower order risks			Higher order risk	

Hierarchy of Controls

CHPL demonstrates ALARP, in part, by adopting the 'Hierarchy of Controls' philosophy (Figure 6-3). The Hierarchy of Controls is a system used across hazardous industries to minimise or eliminate exposure to hazards. The hierarchy of controls is, in order of effectiveness:

- Elimination;
- Substitution;
- Engineering controls;
- Administrative controls; and
- Personal protective equipment (PPE) – this has not been included here as it is specific to the assessment of safety risks rather than environmental management.

Although commonly used in the evaluation of occupational health and safety hazard control, the Hierarchy of Controls philosophy is also a useful framework to evaluate potential environmental controls to ensure reasonable and practicable solutions have not been overlooked.

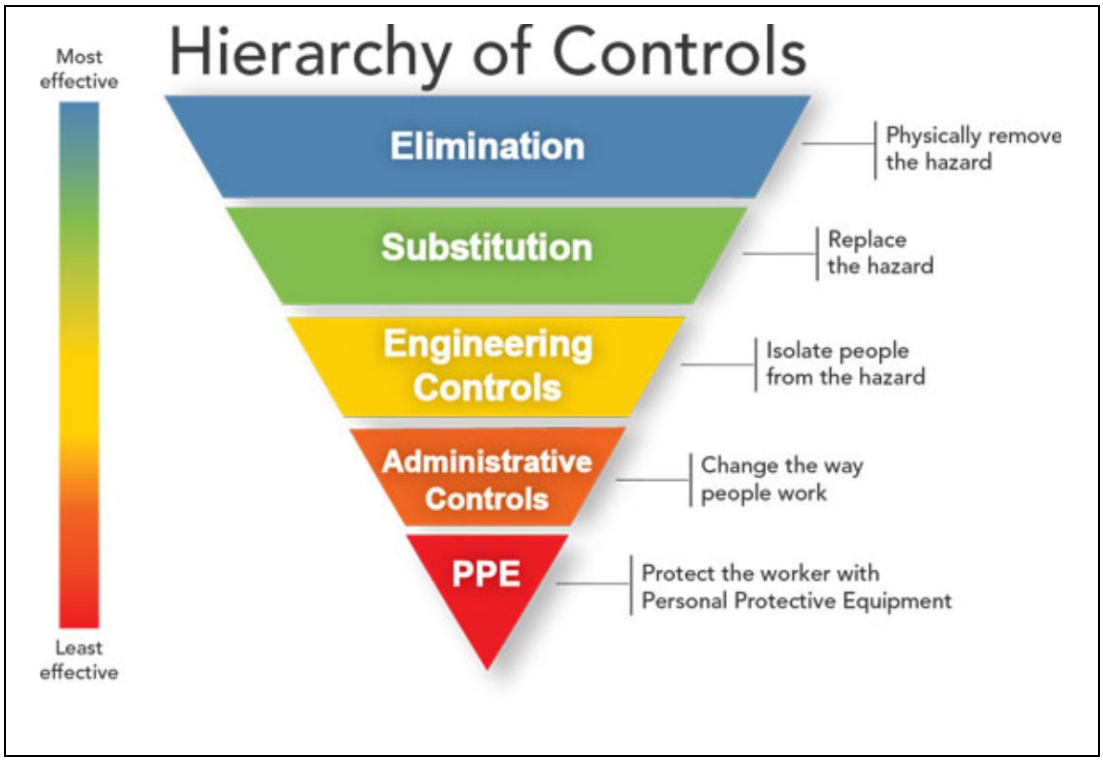


Figure 6.3: The Hierarchy of Controls

When deciding on whether to implement the proposed impact/risk reduction measure, CHPL considers the following issues:

- Does it provide a clear or measurable reduction in risk?
- Is it technically feasible and can it be implemented?
- Will it be supported and utilised by site personnel?
- Is it consistent with national or industry standards and practices?
- Does it introduce additional risk in other operational areas (e.g., will the implementation of an environmental risk reduction measure have an adverse impact on safety)?
- Will the change be effective, taking into account the:
    - Current level of risk (i.e., with the existing controls);
    - Amount of additional risk reduction that the control will deliver;
    - Level of confidence that the risk reduction impact will be achieved; and
    - Resources, schedule and cost required to implement the control.

Reducing impacts and risks to ALARP is an ongoing process and new risk reduction measures may be identified at any time, including during operations. CHPL actively encourages recording and review of observations through the HSE management system (HSEMS) in the incident management system (MyOSH). Incidents and lessons learned within HPB and from the wider industry are reviewed and utilised to identify hazards and controls.

6.5.2 RESIDUAL IMPACT AND RISK LEVELS

The effort given to exploring further mitigation measures must be commensurate with the level of impact and risk predicted. As such, higher order impacts and risks will require a level of evaluation that is higher than what would be expected for lower order impacts and risks where the titleholder is following industry

standards. Impacts and risks are considered to be higher-order when, using the HPB risk matrix (see Table 6-4), the impact consequence is rated as 'major', 'severe' or 'catastrophic', or when the risk is rated as 'very high' or 'severe' (see also Table 6-3). In these cases, further controls must be considered.

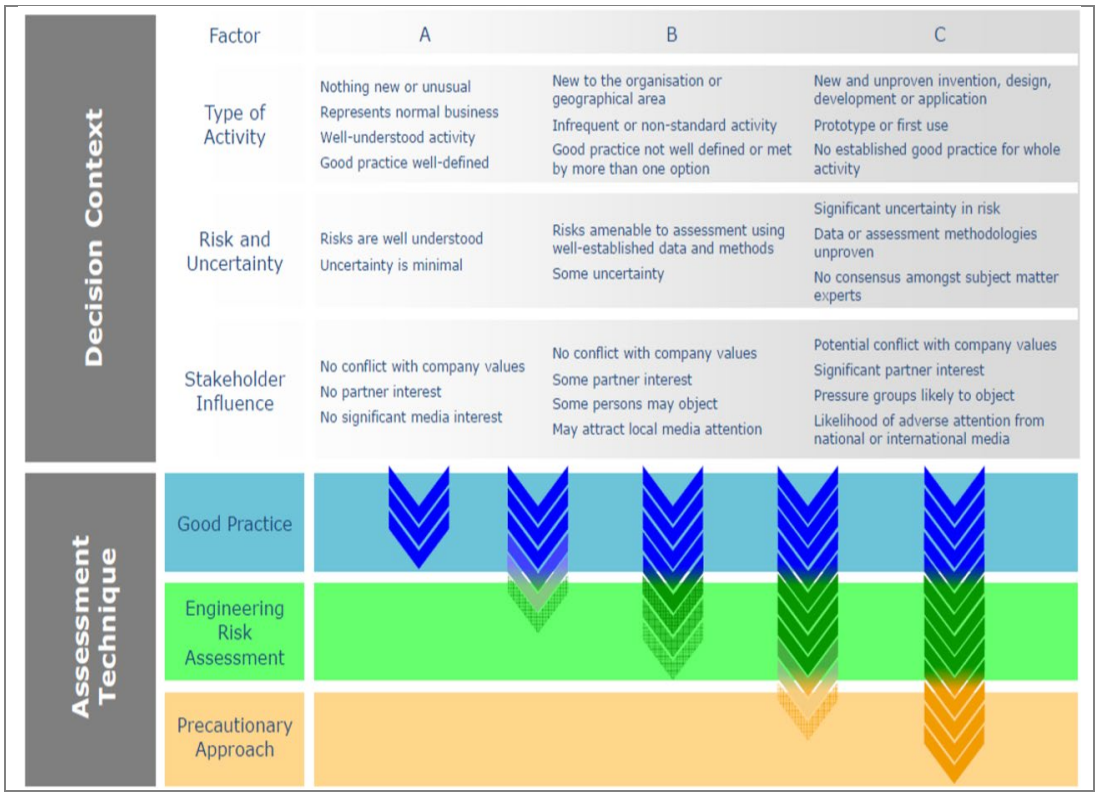
'Significant impact' is defined in DoE (2013) as 'an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value and quality of the environment, which is impacted, and upon the sensitivity, duration, magnitude and geographic extent of the impacts.'

'Likely' is defined in DoE (2013) as 'it is not necessary for a significant impact to have a greater than 50% chance of it happening; it is sufficient if a significant impact on the environment is a real or not remote chance or possibility.'

6.5.3 UNCERTAINTY OF IMPACTS AND RISKS

Based upon the level of uncertainty associated with the impact or risk, the following framework, adapted by NOPSEMA (2015) from the *Guidance on Risk Related Decision Making* (Oil & Gas UK, 2014) (Figure 6-4) provides the decision-making framework to establish ALARP.

This framework provides appropriate tools, commensurate to the level of uncertainty or novelty associated with the impact or risk (referred to as the Decision Type A, B or C) and is detailed further in Table 6-7. The decision type is selected based on an informed decision around the uncertainty of the risk. Decision types and methodologies to establish ALARP are outlined in Figure 6-4.



Source: CER (2015).

Figure 6.4: Impact and risk 'uncertainty' decision-making framework

Table 6-7 Impact and risk 'uncertainty' decision types and tools

Decision type	Description	Decision-making tools
A	Activity Nothing new or unusual. Represents normal business. Well-understood activity. Good practice is well defined. Risk & uncertainty Risks are well understood. Uncertainty is minimal. Stakeholder influence No conflict with company values. No partner interest. No significant media interest.	Good industry practice Identifies the requirements of legislation, codes and standards that are to be complied with for the activity. Applies the 'Hierarchy of Controls' philosophy, which is a system used in the industry to identify effective controls to minimise or eliminate exposure to impacts or risks. Identifies further engineering control standards and guidelines that may be applied over and above that required to meet the legislation, codes and standards.
B	Activity New to the organisation or geographical area. Infrequent or non-standard activity. Good practice not well defined. Risk & uncertainty Risks amenable to assessment using well-established data and methods. Some uncertainty. Stakeholder influence No conflict with company values. Some partner interest. Some persons may object. May attract local media attention.	*In addition to decision type A:* Engineering risk-based tools Engineering risk-based tools to assess the results of probabilistic analyses such as modelling, quantitative risk assessment and/or cost benefit analysis to support the selection of control measures identified during the risk assessment process.
C	Activity New and unproven invention, design, development or application. Prototype or first use. No established good practice for whole activity. Risk & uncertainty Significant uncertainty in risk. Data or assessment methodologies unproven.	*In addition to decision type A and B:* Precautionary Principle Application of the Precautionary Principle is to be applied when good industry practice and engineering risk-based tools fail to address uncertainties.

Decision type	Description	Decision-making tools
	No consensus amongst subject matter experts. Stakeholder influence Potential conflict with company values. Significant partner interest. Pressure groups likely to object. Likely to attract adverse attention from national or international media.	

The decision-making tools outlined in Table 6-7 are explained further below.

Good Industry Practice

In the absence of an Australian definition, the OGUK (2014) and the Irish Commission for Energy Regulation (CER) (2015) define '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'.*

NOPSEMA has not endorsed any 'approved codes of practice' or standards to give them a legal status in terms of good practice. Good practice is taken to refer to any well-defined and established standard or codes of practice adopted by an industrial/occupational sector, including 'learnings' from incidents that may yet to be incorporated into standards.

Good practice can also be used as the generic term for those standards for controlling risk that have been judged and recognised as satisfying the law when applied to a particular relevant case in an appropriate manner. Sources of good practice, adapted from CER (2015) include:

- Commonwealth legislation and regulations (outlined in Section 3.2);
- Relevant government policies (outlined in Section 3.4);
- Relevant government guidance (outlined in Section 3.4);
- Relevant industry standards (outlined in Section 3.7 and Section 3.6); and
- Relevant international conventions (outlined in Section 3.6).

Good practice also requires that hazard management is considered in a hierarchy, with the concept being that it is inherently safer to eliminate a hazard than to reduce its frequency or manage its consequences (CER, 2015). This being the case, the 'Hierarchy of Controls' philosophy is applied to reduce the risks associated with hazards (described in Section 6.5.1).

Engineering Risk Assessment

All impacts and risks that require assessment beyond that of good practice (i.e., decision type A) are subject to an engineering risk assessment.

Engineering risk-based tools can include, but are not limited to, engineering analysis (e.g., structural, fatigue, mooring, process simulation) and consequence modelling (e.g., ship collision, dropped object) CER (2015). A cost-benefit analysis to support the selection of control measures identified during the risk assessment process may also be undertaken.

Precautionary Principle

All impacts and risks that do meet decision type A or type B and require assessment beyond that of good practice and engineering risk assessment are subject to the 'Precautionary Principle'. CER (2015) states that if the assessment, taking account of all available engineering and scientific evidence, is insufficient, inconclusive or uncertain, then the precautionary principle should be adopted in the hazard management process. While there is no globally recognised definition of the Precautionary Principle, it is generally accepted to mean:

> *Uncertain analysis is replaced by conservative assumptions which will increase the likelihood of a risk reduction measure being implemented.*

The degree to which this principle is adopted should be commensurate with the level of uncertainty in the assessment and the level of danger (hazard consequences) believed to be possible.

Under the precautionary principle, environmental considerations are expected to take precedence over economic considerations, meaning that an environmental control measure is more likely to be implemented. In this decision context, the decision could have significant economic consequences to an organisation.

6.5.4 DEMONSTRATION OF ACCEPTABILITY

Regulation 21(5)(c) of the OPGGS(E) require the EP to demonstrate that environmental impacts and risks are acceptable.

NOPSEMA's *Environment Plan Decision Making Guideline* states that stakeholder consultation plays a large part in establishing the context for defining an acceptable level of environmental impact or risk may be.

CHPL considers a range of factors to demonstrate the acceptability of the environmental impacts and risks associated with its activities. This evaluation works at several levels, as outlined in Table 6-8. The criteria for demonstrating acceptability were developed based on CHPL's interpretation of NOPSEMA's Guidance Note for *EP Content Requirements* (N04750-GN1344, Rev 0, February 2014 [noting that this has since been superseded]) and NOPSEMA's *Environment Plan Decision Making Guideline*.

Table 6-8 Acceptability criteria

Test	Question	Acceptability demonstration
Internal context		
Policy compliance	Is the proposed management of the hazard aligned with HPB's Environmental Policy?	The impact or risk must be compliant with the objectives of the company policies.
Management System Compliance	Is the proposed management of the hazard aligned with the HPB MSS?	Where specific HPB procedures, guidelines, expectations are in place for management of the impact or risk in question, acceptance is demonstrated.
External context		
Stakeholder engagement	Have stakeholders raised any concerns about activity impacts or risks? If so, are measures in place to manage those concerns?	Merits of claims or objections raised by stakeholders must have been adequately assessed and additional controls adopted where appropriate.

Legislation, industry standard and best practice		
Legislative context	Do the management controls meet the expectations of existing Commonwealth legislation?	The proposed management controls align with legislative requirements.
Industry practice	Do the management controls align with industry practice?	The proposed management controls align with relevant industry practices.
Environmental context	Are the management controls aligned with the nature of the receiving environment (e.g., do management controls align with threatened species recovery plans)?	The proposed management controls do not contravene management actions outlined in government plans and are commensurate with the nature and scale of the activity.
Ecologically sustainable development (ESD) Principles*	Are the management controls aligned with the principles of ESD?	The EIA presented throughout Section 7 and 8 is consistent with the principles of ESD.

* See Table 6-9 for further information.

6.5.5 PRINCIPLES OF ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Based on Australia's National Strategy for Ecologically Sustainable Development (Council of Australian Governments, 1992), Section 3A of the EPBC Act defines ESD as:

Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased.

Table 6-9 outlines the principles of ESD as defined under the EPBC Act and describes how this EP aligns with these principles.

Table 6-9 Principles of Ecologically Sustainable Development

Principle		EP Demonstration
A	Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	This principle is inherently met through the EP assessment process and Environmental Impact Identification (ENVID) process. CHPL's Environmental Impact Assessment (EIA) and Environmental Risk Assessment (ERA) determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level. The assessment of impact consequence levels for the proposed activity simultaneously assesses the activity's potential implications against this principle.

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.	Serious or irreversible environmental damage resulting from CHPL operations has been eliminated through the activity design (see Section 2). None of the residual impacts are rated higher than 'negligible', and none of the unplanned residual risks are rated higher than 'medium'. Scientific certainty has been maximised by employing an Operational Area as a risk assessment boundary.
C	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 assessment of this principle is implemented through the EP assessment methodology and ENVID process, which ensures that risks from the activity are ALARP and acceptable. Impacts and risks of the activity will not forego the health, diversity and/or productivity of the environment for future generations.
D	The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	This principle is considered for each hazard in the adoption of environmental controls (i.e., EPO and EPS) that aim to minimise environmental harm. There is a strong focus in this EP on conserving biodiversity and ecological integrity by understanding the marine environment, including MNES (Section 5) and implementing controls to minimise impacts and risks (Section 7 and 8).
E	Improved valuation, pricing and incentive mechanisms should be promoted.	This principle is not relevant to this activity.

6.6 TREAT THE RISKS

The impacts and risks associated with the activity are assessed in Section 7 and 8, together with their control measures (i.e., measures to prevent, minimise and mitigate impacts and risks).

6.7 MONITOR AND REVIEW

Monitoring and review activities are described in detail in the Implementation Strategy (Section 9).

7 PLANNED ACTIVITIES ENVIRONMENTAL IMPACT AND RISK ASSESSMENT

This section presents the EIA and ERA for the environmental impacts and risks identified for the activity using the methodology described in Section as required under Regulations 21(5) of the OPGGS(E).

This section also presents the environmental performance outcomes (EPO), environmental performance standards (EPS) and measurement criteria required to manage the identified impacts and risks.

The following definitions are used in this section, as defined in Regulation 5 of the OPPGS(E):

- EPO – 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 (i.e., a statement of the environmental objective).
- EPS – a statement of the performance required of a control measure.
- Measurement criteria (not defined in the regulations) – defines the measure by which environmental performance will be measured to determine whether the EPO has been met.

As noted in Section 2.5, WSH-3 is plugged in accordance with international standards and the risk of hydrocarbon release to the surface is the same as a permanently abandoned well (i.e., it is not a credible risk). Wardie-1 is a permanently abandoned well.

It is now intended to decommission WSH-3 and remove the Wardie-1 conductor. Therefore, this EP will assess the impacts and risks of activities associated with a vessel-based decommissioning program. A summary of the planned impact and risk assessment completed during an ENVID on 14th June 2024 is summarised in Table 7-1.

Table 7-1: Summary of environmental consequence of planned impacts

Planned Aspect	Consequence from ENVID
Light emissions from support vessels	Negligible
Noise emissions from decommissioning activities, vessels, ROV	Negligible
Atmospheric emissions from support vessels and helicopters	Negligible
Liquid Waste discharged from vessels	Negligible
Displacement of or interference with third-party vessels and activities	Negligible
Seabed disturbance	Negligible

7.1 RISK: LIGHT EMISSIONS

7.1.1 HAZARD

Light generated from decommissioning activities is associated with the vessel operation and decommissioning operations, and when entering and exiting the area.

The project vessels will have external lighting to facilitate navigation and safe operations at night. External light emissions from the vessels are typically managed to a level that maintains good night vision for crew members.

Lighting on the vessels is used to allow safe operations during night hours, and to communicate the vessel's presence and activities to other marine users (i.e. navigation lights). Lighting is required to safely operate the vessels and cannot reasonably be eliminated.

7.1.2 KNOWN AND POTENTIAL IMPACTS

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

- Behaviour: many organisms are adapted to natural levels of lighting and the natural changes associated with the day and night cycle as well as the phase of the moon. Artificial lighting has the potential to create a constant level of light at night that can override these natural levels and cycles.
- Orientation: species such as marine turtles and birds may also use lighting from natural sources to orient themselves in a certain direction at night. In instances where an artificial light source is brighter than a natural source, the artificial light may override natural cues, leading to disorientation.

A summary of possible impacts is provided below:

- **Cetaceans:** There is no evidence to suggest that artificial light sources adversely affect the migratory, feeding or breeding behaviours of marine mammals. Marine mammals predominantly utilise acoustic senses to monitor their environment rather than visual sources (Simmonds et al. 2004), so light is not considered to be a significant factor in marine mammal behaviour or survival.

- **Turtles:** Turtles are known to use a variety of cues for navigation when in the water. However, light is not thought to be an important cue for adults, although adults are considered to have a preference for non-illuminated beaches (EPA 2010). The most significant risk posed to marine turtles from artificial lighting is the potential disorientation of hatchlings following their emergence from nests. Hatchlings use the light of the oceanic horizon to orientate themselves towards the sea when making their way into the water for the first time; the oceanic horizon is almost always brighter than the elevated landward horizon (EPA 2010). The operational area does not overlap any BIA for marine reptiles.
  The National Light Pollution Guidelines states that a 20 km buffer (based on sky glow) to important habitat for turtles should be applied when considering possible impacts (DoEE, 2020). As there are no BIAs within the operational area or EMBA, potential impact is considered negligible.

- **Seabirds**: Artificial lighting can attract and disorient seabird species resulting in species behavioural changes (e.g. circling light sources or disrupted foraging), injury or mortality near the light source as a result of collision (Longcore and Rich, 2004; Gaston et al. 2014). The Operational Area may be occasionally visited by migratory and oceanic birds, but does not contain any emergent land that could be used as roosting or nesting habitat and contains no known critical habitats for any species. (negligible impacts).

  Light potentially impacts breeding seabirds in the operational area in much the same way as it does marine turtles, though is species dependent and some seabirds may not be expected to experience any impact at all due to their diurnal behaviour (e.g. terns and shearwaters). A study into light impacts upon nocturnally migrating birds on the North Sea found that birds were disoriented and attracted by red and white light (containing visible long-wavelength radiation), whereas they were clearly less disoriented by blue and green light (containing less or no visible long wavelength radiation) (Poot et al., 2008). In addition, disoriented adult birds may not be able to return to their burrows to relieve their mates or feed their young. Fledglings are particularly vulnerable to light through misorientation and disorientation when departing the colony for the first time.
  The Wildlife Conservation Plan for Seabirds (DAWE 2020) identifies a buffer of 20 km around a location for potential impacts, but given the short duration of the activity, any changes to behaviour will be short term.

  Although the operational area overlaps several bird BIAs (Section 5.5.9, Figure 5.10), suggesting a number of species may overfly the location, impacts to transient seabirds will be limited to short-term behavioural effects with no decrease in local population size or area of occupancy of species, loss or disruption of critical habitat, or disruption to the breeding cycle as the vessel will not be on location for long enough to result in a significant behavioural disruption to species.

- **Fish and plankton**: Fishes will likely not be affected by navigational lighting for mariners (Morandi et al 2018). However, other light emissions from the activity (such as deck lights for operational

requirements) in the operational area may result in localised aggregation of fish in the immediate vicinity of the vessel. This may result in an increase in predation on prey species aggregating in the area, or exclusion of nocturnal foragers/predators from the area (Marchesan et al. 2005). Artificial light can also influence dial vertical migration patterns of plankton (including planktonic life stages of some fish species) in the surface waters and lead to migrations that occur outside of the optimal window for that species (Gibson et al. 2001, cited in Morandi 2018). The operational area and EMBA overlap with foraging and breeding BIA for great white sharks.

7.1.3 EVALUATION OF ENVIRONMENTAL RISKS

The National Conservation Values Atlas (DoEE, 2019j) indicates that there are several foraging BIAs for bird species within the operational area due to the relative proximity to coastline.

Three species of marine turtle are listed under the EPBC Act as potentially occurring in the Operational Area, as listed in Table 5-7 (DoEE, 2024). No BIAs for turtles occur within Bass Strait. Environment Australia (2003) reports that the turtles known to occur in Victorian waters are considered to be rare vagrants outside their usual range. No turtles are listed as threatened under the FFG Act 1988 (Vic), except for the leatherback turtle.

Given the lack of significant fauna populations, no nearby nesting turtle beaches expected to occur within the Operational Area or EMBA, impacts from light emissions are considered to be negligible. Impacts to transient fauna will be limited to short-term behavioural effects with no decrease in local population size or area of occupancy of species, loss or disruption of critical habitat, or disruption to the breeding cycle

7.1.4 IMPACT ASSESSMENT

Table 7-2 presents the impact assessment for the light generated from decommissioning activities.

Table 7-2 Impact assessment for the light generated from decommissioning activities.

Summary		
Summary of impacts	Potential effect on marine fauna behaviour and orientation.	
Extent of impact	Localised – immediately around vessel and Operational Area.	
Duration of impact	Short-term (<7 days) for the duration of onsite activity. Most activities will be undertaken during the day which will be when minimal lighting is used.	
Level of certainty of impacts	HIGH – The vessel and decommissioning activities will generate light during operations and entering or exiting the area.	
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.	
Environmental Controls and Performance Measurement		
EPO 1: Activity lighting managed in accordance with navigational and safety requirements		
Control Measures	EPS	Measurement criteria

Vessel lighting in accordance with COLREGS, Navigation Act 2012 and marine orders and in allowing safe operation and activities (including emergency lighting). Fluorescent and LED lighting in place.	EPS-01: Vessel navigation lights are visible as per regulatory requirements.	PMS confirms navigational lighting is maintained as per COLREGs, Navigation Act 2012 and marine orders
Impact consequence (residual)		
Negligible		
Demonstration of ALARP		
A 'low' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered and rejected are summarised below.		
Control considered	**Potential benefit**	**Reasoning for rejection**
All activities completed in daylight hours only	Reduced requirement for lighting and therefore reduces potential impacts to fauna in the vicinity	Daylight operations only considered to introduce unnecessary cost (i.e. 12 vs 24-hour ops.), whilst delivering little/ no environmental benefit. There would be a >100% increase in time taken to complete the activities resulting in significant costs. Light from the vessels will not illuminate beaches where receptors sensitive to light emissions are present and will be of short duration in the operational area.
Replace external lights or reduce the lighting	Reduce the potential for impacts from lighting on marine fauna.	Lights are required to create illumination levels needed for safe working, emergencies and navigational requirements. No additional cost but introduces unacceptable safety risks to personnel and vessels. Little benefit given relatively low numbers of turtles and seabirds in operational area and surrounding waters.

Add filters to lights or re-design placement/positioning	Reduce potential impacts from bright white lights on the surface waters and potentially reducing impact to sensitive fauna.	Lighting has been positioned such that maximum illumination of work surfaces within asset structures is achieved. Costly and considered grossly disproportionate to any gain when considering the distances that the Operational Area is from turtle or seabird nesting areas.
Reduce usage of lighting in peak sensitive receptor windows	Reduce potential impacts from lighting on sensitive fauna.	To ensure lighting meets health and safety requirements, lighting is required throughout the day/ night for the duration of the activities. To isolate usage such that lights were not used during sensitive receptor windows would create a non-conformance with health and safety requirements.

Demonstration of Acceptability		
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).	
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.	
Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding light emissions.	
Legislative context	The EPS outlined in this EP align with the requirements of: • *OPGGS Act* 2006 *(Cth):* ○ Section 280(2) – requires that a person carrying on activities in an offshore area under the permit, lease licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others). ○ Part 6.6 (Safety zones and the area to be avoided). • *Navigation Act* 2012 *(Cth):* ○ Chapter 6 (Safety of navigation).	
Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity.	
Environmental context	*National Light Pollution Guidelines (DCCEEW 2023)*	The light assessment boundary of 20 km from the source has been used as the extent of light exposure, in accordance with National Light Pollution Guidelines for Wildlife (DCCEEW 2023b).
	Marine reserve management plans	Not triggered by this hazard.

	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	National recovery plan for Turtles (nesting beaches only, therefore not triggered by this hazard) (DoEE 2017) Wildlife Conservation Plan for Seabirds (DAWE2020)	
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).		
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.		The ENVID process considers both long-term and short-term impacts, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are short-term (less than 7 days) and localised with intermittent use of lighting. The Wildlife Conservation Plan for Seabirds (DAWE 2020) recommends a buffer of 20 km around a location for potential impacts, but since the activity is brief and the light emission will be just around the vessel and Operational Area (localised), any changes to behaviour will be temporary.
	Principle 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.		There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short-term and localised. There is no scientific uncertainty, as the activity is well understood, good practice is well defined and the impact assessment includes consideration of recovery plans and the information provided in the National Light Pollution Guidelines for Wildlife.

	Principle C: 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 impacts from this activity are short-term (<7 days) and localised (within <20 km), and there are no impacts to the health, diversity or productivity of the environment for future generations as once the vessel leaves the field the light emissions will cease.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
None required.		
Record Keeping		
Vessel logs. Audit logs. Incident reports.		

7.2 RISK: NOISE EMISSIONS

7.2.1 HAZARD

Sound generated from decommissioning activities is associated with the vessel operation and decommissioning operations, and when entering and exiting the area. Vessel noise varies with the size, speed, and engine type and the activity being undertaken. The loudest noise level from vessels is where thrusters are used to maintain position which will be required during this activity. Noise levels for a range of vessels have been measured at 164-182 dB re µPa at 1 m (Wyatt 2008). Vessel noise is expected to decrease rapidly from the source.

The International Maritime Organization (IMO) recognizes that underwater noise from ships may have short- and long-term negative consequences on marine life, especially for marine mammals that rely on the use of sound for life-critical purposes.
In the Gippsland Basin, primary contributors to background sound levels were wind, rain, and current- and wave-associated sound at low frequencies under 2 kHz (Przeslawski, et al. 2016). However, shipping noise has being a greater contributor to the marine soundscape in the area which is also close to the southern right whale BIAs (DCCEEW, 2024). A migration BIA overlaps the EMBA and Operational Area while there is a reproduction BIA that is located approximately 10.1km from the Operational area. Ambient underwater sound levels in the Gippsland Basin within the 100–500 Hz frequency range varied depending on recording location between 89.2–109.9 dB re 1 μPa^2/Hz, likely due to a varied increase in distance from shipping activity, and water depth (Przeslawski et al., 2016).

The activity vessel will contribute to the existing anthropogenic sounds produced by existing shipping traffic (i.e. commercial fishing and existing oil and gas operations) and the natural ambient noise generated by atmospheric and oceanographic processes.

Typically, marine vessels produce low frequency sound (i.e. below 1 kHz) from the operation of machinery on-board; from hydrodynamic flow noise around the hull; and from propeller cavitation, which is typically the dominant sound source. Most sounds associated with vessels are broadband (i.e. contain a broad range of frequencies), though, tones are also associated with the harmonics of the propeller blades. Examples of the sound sources from vessels and ROV cutting equipment are provided in Table 7.3. A utility vessel such as the Skandi Darwin (or similar) will be utilised for the activity. Such vessels are expected to be approximately 90m in length and are comparable to the size of vessel noted in Table 7-3 for which noise modelling has been completed and is therefore considered representative of the proposed activity.

Table 7-3: Continuous sound sources frequencies and sound levels

Emission source	Source sound level	Reference
PSV (<100m length) ROV vessel	150 - 189 dB re 1 µPa, depending on size, age, speed and engine characteristics	Jadestone Energy (2022) Connell et al (2021) In Cooper Energy (2023) ESSO (2024)
ROV cutter	Broadband SPL: 161.4 dB re 1 µPa	Connell et al (2021) In Cooper Energy (2023) ESSO (2024)

Broadband SPL calculated over 10 Hz to 25 kHz range.

7.2.2 KNOWN AND POTENTIAL IMPACTS

In the underwater environment, sound is crucial for marine animals, particularly for cetaceans (whales and dolphins) who use it to navigate, communicate, and find food. Similarly, other species such as reptiles, sharks, rays, and various fish use sound for social interactions, locating prey, and orienting themselves.
The primary concern arising from sound generation from vessels is the potential effect on marine fauna with effects, such as:

- attraction
- increased stress levels
- disruption of underwater acoustic cues
- behavioural changes or displacement from foraging areas
- masking
- localised avoidance
- temporary threshold shifts in hearing or physiological damage.

Each of the possible effects listed is dependent on the species, the sound source levels and characteristics and exposure (distance from the sound source).

Marine fauna respond variably when exposed to underwater noise from anthropogenic sources, with effects dependent on a number of factors, including distance from the sound source, water depth and bathymetry, the animal's hearing sensitivity, type and duration of sound exposure and the animal's activity at time of exposure. Broadly, the effects of sound on marine fauna can be categorised as:

- Acoustic masking - anthropogenic sounds may interfere with, or mask, biological signals, therefore reducing the communication of an individual. Auditory masking impacts may occur when there is a reduction in audibility for one sound (signal) caused by the presence of another sound (noise). Masking effect happens when a noise reduces the clarity of a signal by being loud enough and having a similar frequency, with both the noise and signal occurring simultaneously.
- Behavioural response - behavioural impacts will depend on the audible frequency range of each potential receptor in relation to the frequency of the noise. The intensity of behavioural responses of marine mammals to sound exposure ranges from subtle responses, which may be difficult to observe and have little implications for the affected animal, to obvious responses, such as avoidance or panic reactions. The threshold for elicitation of behavioural responses depends on received sound level, the nature and novelty of a sound, spatial relations between a sound source and receiving animals, and the gender, age, and reproductive status of the receiving animal.
- Physiological impacts - auditory threshold shift (temporary and permanent hearing loss) - marine fauna exposed to intense sound may experience a loss of hearing sensitivity, or even potentially mortal injury. Hearing loss may be temporary, known as temporary threshold shift (TTS), from which an animal recovers within minutes or hours, or permanent, known as permanent threshold shift (PTS) from which the animal does not recover.

Noise effect thresholds for different receptors based on current best available science, have been used in the impact and risk assessment shown in Table 7.4.

Table 7-4 Noise effect criteria for continuous sound.

Receptor	Behavioural	Impairment			Injury	
		Masking	Temporary threshold shift	Recoverable injury	Permanent threshold shift	Mortality or potential mortal injury

Low-frequency Cetaceans (Blue, fin, southern right etc)	SPL: 120 dB re 1 µPa	N/A	SEL_{24h}: 179 dB re 1 μPa^2s	N/A	SEL_{24h}: 199 dB re 1μPa^2s	N/A
Mid-frequency cetaceans (toothed whales except porpoises and river dolphins)	SPL: 120 dB re 1 µPa	N/A	SEL_{24h}: 178 dB re 1 μPa^2 s	N/A	SEL_{24h}: 198 dB re 1 μPa^2s	N/A
High-frequency cetaceans (true porpoises, river dolphins)	SPL: 120 dB re 1 µPa	N/A	SEL_{24h}: 153 dB re 1 μPa^2s	N/A	SEL_{24h}: 173 dB re 1 μPa^2s	N/A
Otariid seals (sea lions and fur seals)	SPL: 120 dB re 1 µPa	N/A	SEL_{24h}: 199 dB re 1 μPa^2s	N/A	SEL_{24h}: 219 dB re 1 μPa^2s	N/A
Turtles	(N) High (I) Moderate (F) Low	N/A	SEL_{24h}: 200 dB re 1 μPa^2s	N/A	SEL_{24h}: 220 dB re 1 μPa^2s	N/A
Fish (no swim Bladder or swim bladder not involved in hearing)	(N)Moderate (I) Moderate (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Low (F) Low	(N) Low (I) Low (F) Low	N/A	(N) Low (I) Low (F) Low
Fish (swim bladder involved in hearing)	(N) High (I) Moderate (F) Low	(N) High (I) High (F) High	SPL: 158 dB re 1 µPa for 12 hours	SPL: 170 dB re 1 µPa for 48 hours	N/A	(N) Low (I) Low (F) Low
Fish eggs and fish larvae (also relevant to plankton)	(N) Moderate (I) Moderate (F) Low	(N) High (I) Moderate (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	N/A	(N) Low (I) Low (F) Low

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

7.2.3 EVALUATION OF ENVIRONMENTAL RISKS

7.2.3.1 Cetacean Impacts

A Foraging BIA for the pygmy blue whale, and a Migration BIA (April to October) for the southern right whale overlaps the Operational Area. The EMBA also overlaps the Reproduction BIA (May to September) for the southern right whale and the Breeding BIA for the Indo-Pacific bottlenose dolphin (north west end of the EMBA). These species, therefore may be present in the operational area (Figure 5.5, Figure 5.8, Figure 5.9) and are the primary focus for the following impact assessment, other individual cetaceans may also be present as identified by the PMST search (Table 5-6).

Blue whales produce powerful (188 dB re: 1 µPa @ 1 m), low frequency (10–500 Hz) sounds compared to other animals (Cummings & Thompson, 1971; McDonald, 2001). Previous literature reviews, such as those by Southall et al. (2007), have shown that marine mammals exhibit varying responses to sound pressure levels (SPLs) ranging from 140 to 180 dB re 1 µPa. Specifically, low-frequency whales—such as blue, fin, sei, and southern right whales—demonstrate minimal or no response to SPLs between 90 and 120 dB re 1 µPa. However, as the SPL

increases from 120 to 160 dB re 1 µPa, there is a higher likelihood of avoidance behaviour and other behavioural changes in these species.

Physiological Impacts

Acoustic modelling (Cooper Energy, 2023) indicated that the R_{max}[6] from the source (e.g., vessels on DP) to permanent threshold shifts (PTS) SEL_{24h} noise effect criteria was 0.05 km, while the temporary threshold shift (TTS) SEL_{24h} noise effect criteria was 1.09 km for low-frequency cetaceans. Given that cetaceans (if present) are expected to be transitory through the area, the risk of permanent auditory injury (PTS) to cetaceans is not considered credible, as this requires them to remain within ~50 m or ~60 m of the vessel for at least a 24-hour period. For a temporary auditory injury (TTS) to occur to low-frequencies cetaceans they need to remain within ~1.09 km or ~1.57 km of the vessel for at least a 24-hour period which is also unlikely (Table 7.5) (Cooper Energy, 2023). This modelling is conservative when applied to this EP since those activities were more complex and extended over a longer duration compared to the proposed activity in this EP. If present, blue whales, for example, would be expected to be on migration through the Gippsland Region and not exposed to activity noise for long enough for TTS onset. The noise level sources are predicted to be below the thresholds for PTS. EPS-47 details the requirements for pre-DP start-up observations to ensure that any whales are outside of the radius for potential injury. To ensure conservatism, a 2km radius has been selected to allow for ease of distance estimation.

Behavioural Impacts

Behavioural responses to underwater sound for cetaceans are difficult to determine because different marine fauna perceive sound differently and vary widely in their response type and strength. A number of different exposure scenarios and potential impacts to different groups of marine fauna are therefore considered in the impact assessment for behavioural response. This activity is located approximately 13 km off the Gippsland coast in water depths of approximately 39.5 m. A review of recent underwater noise modelling studies comparable to this activity has been completed with considerations for the location in the Gippsland Basin, noise source, vessel size and water depth. This included studies commissioned by both Cooper Energy and Esso.

Cooper Energy has subsea infrastructure in water depths of 155 m, which is approximately 94 km from the Seahorse location and 55 km from the Victorian coast.

Cooper Energy commissioned JASCO Applied Sciences to conduct acoustic modelling to inform the risk assessment associated with underwater sound exposure from vessels (platform support vessel [PSV], and an ROV vessel), ROV, and ROV cutting tool operations (Connell, Koessler and McPherson 2021); these vessels and ROV tools are similar to those proposed for this activity. The modelling was undertaken to assist in understanding the potential acoustic impact on receptors including marine mammals (cetaceans and otariid seals), turtles and fish (including eggs and larvae). Estimated underwater acoustic levels are presented as sound pressure levels (SPL), and accumulated sound exposure levels (SEL24h) as appropriate for different noise effect criteria (Connell, Koessler and McPherson 2021). The modelled water depth for the six locations ranged from 132.2 m to 259 m with a source depth of 6.2 m for vessels and 188.5 m and 254 m for ROV cutting tool at two locations. The modelled maximum horizontal distance (R_{max}) from any modelling scenario to reach noise effect criteria (including behavioural effects) was 8.62 km for low, mid and high frequency cetaceans and otariid seals.

Esso commissioned JASCO Applied Sciences (Matthews, Connell, & McPherson, 2022) to undertake underwater sound modelling for various scenarios in the Bass Strait, including a support vessel using DP thrusters close to a Jack-up rig. The sites modelled were in water depths of approximately 60 m and at distances ranging from 11 – 66 km from the Seahorse location. The greatest distance to the behavioural effects threshold for marine mammals was predicted to be 5.62 km.

[6] The SEL_{24h} is a cumulative metric that assumes a receptor is consistently exposed to the relevant noise effect criteria for a 24-hour period.

To assess any potential behavioural responses associated with underwater noise for the West Seahorse-3 / Wardie-1 activity, a highly conservative estimate of 8.62 km has been applied to represent the underwater noise EMBA. The noise EMBA overlaps the migration BIA for southern right whale, and the foraging BIA for pygmy blue whale. The area in which the behavioural effects threshold overlaps the respective BIA's represents a very small portion of the pygmy blue whale foraging BIA (0.04%), and southern right whale migration BIA (0.6%). Given the small spatial overlap with BIAs, any significant behavioural effects to southern right whale migration and pygmy blue whale foraging is considered unlikely should the activity coincide with peak seasonal timings. For the southern right whale, underwater noise does not exceed the behavioural effects threshold in the reproduction BIA and only represents a small portion of the migration BIA (0.6%). Therefore, any potential behavioural effects would be temporary, recoverable and limited to individuals only (i.e. no biologically significant behavioural disturbance).

Summary
Consequently, it is considered physiological impacts to cetaceans is highly unlikely due to the sound sources used and the species moving through the area. However, behavioural impacts (i.e. avoidance) may occur during vessel activities at the location; and the possibility of sound masking is possible in close proximity to the vessel (i.e. minor impact).

Assessment against recovery plans
The Conservation Management Plan for Blue Whale (DoE, 2015b) assesses the threat from shipping and industrial noise, as a minor consequence which is defined "as individuals are affected but no effect at a population level". DoE (2015b) also states that "It is the high intensity signals with high peak pressures received at very short range that can cause acute impacts such as injury and death." As vessel noise is a continuous noise source and does not have high intensity signals, so it is unlikely that they would cause injury to foraging pygmy blue whales.

According to the National Recovery Plan for Southern Right Whale (DCCEEW, 2024) 'Actions within and adjacent to southern right whale BIAs and HCTS (habitat critical to the survival) should demonstrate that the risk of behavioural disturbance is minimised' and 'that it does not prevent any southern right whale from utilising the area or cause auditory impairment'. Some temporary and localised behavioural response may result from the noise levels emitted, but these will not be at levels that could cause mortality or injury to marine fauna or cause a decrease in local population size or area of occupancy of species. The measures adopted reflect a precautionary approach; they are designed such that the risk of injury and displacement are reduced so that the foraging behaviour of the cetaceans should not be impacted. The residual risks to the species are considered low as the duration of activities is limited to approximately 7 days (weather dependent). Consistent with the Conservation Management Plan for Blue whale and The National Recovery Plan for Southern right whale, CHPL has assessed the temporary behavioural disturbance of blue whale and southern right whale to be potential, yet highly unlikely, confined to individual animals with no anticipated effect at the community or species level.

Actions from the CMP for the Blue Whale (Commonwealth of Australia 2015) and National Recovery Plan (NRP) for Southern right whale applicable to the activity in relation to assessing and addressing anthropogenic noise have been addressed by:

- Reviewing the noise effect of underwater activities on both whale species behaviour (this Section)
- Activity noise in BIAs ensures that any whale continues to utilise the area without harm and, if it is displaced from a foraging area, it will be only temporary.
- Section 7.2.4 and Table 7-5 demonstrates that the activity will be conducted in a manner that is not inconsistent with the CMP for blue whales and NRP for southern right whales. The accepted control measures also help to minimize the risks of displacement, in line with DAWE guidelines (2021) which advise 'Mitigation measures must be implemented to reduce the risk of displacement occurring during operations...'
- Not impact the recovery of both whale's species

The activity will be conducted in a manner that is not inconsistent with the CMP for blue whales and NRP for southern right whales. The hazard carries a negligible environmental risk to cetaceans.

Table 7-5: Assessment of activity against National Recovery Plan for the Southern Right Whale *Eubalaena australis* (DCCEEW, 2024) and Conservation Management Plan for the Blue Whale - A Recovery Plan under the EPBC Act 1999 (Commonwealth of Australia, 2015) for noise interference

Relevant Plans/Advice	Threats	Actions required by Conservation/Recovery Plans	Relevant Control Measures
Conservation Management Plan for the Blue Whale - A Recovery Plan under the EPBC Act 1999 (Commonwealth of Australia, 2015)	Noise interference (C)	A.1: Maintain and improve existing legal and management protection A.2: Assessing and addressing anthropogenic noise B.1: Measuring and monitoring population recovery B.2: Investigating population structure B.3: Describing spatial and temporal distribution and defining biologically important habitat	**A. 1 activity will be compliant:** • Implementation of controls for reduced vessel speed around cetaceans can potentially reduce the underwater noise footprint of a vessel and lower the likelihood of interaction above significant thresholds. Vessel Masters observe speed restrictions and proximity distances as required in the EPBC Regulations 2000 (Part 8) (EPS-04). • Vessel crew has completed an EP-specific environmental induction covering the requirements for cetacean/vessel interaction distances consistent with EPBC Regulations 2000 and are familiar with the requirements (EPS-05). **A. 2 activity will be compliant:** • EP chapter 7.2.3 assesses known impacts of anthropogenic noise • Maintenance and inspection completed as scheduled reduces the generated noise emissions and associated impacts. Documented maintenance program is in place for ROV and cutting tools that provides a status on the maintenance of equipment (EPS-02). • Maintenance and inspection completed as scheduled reduces the generated noise emissions and associated impacts. Documented maintenance program is in place for equipment on vessels that provides a status on the maintenance of equipment (EPS-03). **B.1:** Not relevant to activity **B. 2:** Not relevant to activity **B. 3:** Refer to Section 5.5.6

Relevant Plans/Advice	Threats	Actions required by Conservation/Recovery Plans	Relevant Control Measures
	Vessel disturbance (E)	A.1: Maintain and improve existing legal and management protection A.2: Assessing and addressing anthropogenic noise A.4: Minimising vessel collisions B.1: Measuring and monitoring population recovery B.2: Investigating population structure B.3: Describing spatial and temporal distribution and defining biologically important habitat	**A. 1 activity will be compliant:** • Implementation of controls for reduced vessel speed around cetaceans can potentially reduce the underwater noise footprint of a vessel and lower the likelihood of interaction above significant thresholds. Vessel Masters observe speed restrictions and proximity distances as required in the EPBC Regulations 2000 (Part 8) (EPS-04). • Vessel crew has completed an EP-specific environmental induction covering the requirements for cetacean/vessel interaction distances consistent with EPBC Regulations 2000 and are familiar with the requirements (EPS-05). • Any vessel collision with marine fauna in the operational area is submitted to the National Ship Strike Database at: https://data.marinemammals.gov.au/report/shipstrike Death or injury to EPBC Act listed marine fauna from vessel collision are recorded/reported to NOPSEMA and DCCEEW in line with regulations (EPS-31). **A. 2 activity will be compliant:** • Maintenance and inspection completed as scheduled reduces the generated noise emissions and associated impacts. Documented maintenance program is in place for ROV and cutting tools that provides a status on the maintenance of equipment (EPS-02). • Maintenance and inspection completed as scheduled reduces the generated noise emissions and associated impacts. Documented maintenance program is in place for equipment on vessels that provides a status on the maintenance of equipment (EPS-03). **A. 4 activity will be compliant:**

Relevant Plans/Advice	Threats	Actions required by Conservation/Recovery Plans	Relevant Control Measures
			• Implementation of controls for reduced vessel speed around cetaceans can potentially reduce the underwater noise footprint of a vessel and lower the likelihood of interaction above significant thresholds. Vessel Masters observe speed restrictions and proximity distances as required in the EPBC Regulations 2000 (Part 8) (EPS-04). • Vessel crew has completed an EP-specific environmental induction covering the requirements for cetacean/vessel interaction distances consistent with EPBC Regulations 2000 and are familiar with the requirements (EPS-05). • Vessel crew are trained and competent, in accordance with Flag State regulations, to navigate vessels (EPS-44). • Competent crew shall maintain constant bridge-watch (EPS-46). • One Watchkeeper is focused on the operational task at hand, the other is responsible for maintaining the safe navigation of the vessel including keeping compliance with COLREGs Rule 5 which requires that the vessel at all times maintains a proper look out by sight, hearing and all available means appropriate to the prevailing circumstances and conditions, including marine fauna observations (EPS-47). • Adaptive management measures are intended to ensure that no whales are in proximity to vessels before commencing DP operations (EPS-48). **B.1:** Not relevant to activity **B. 2:** Not relevant to activity **B. 3:** Refer to Section 5.5.6
National Recovery Plan for the Southern Right Whale *Eubalaena*	Habitat degradation - Infrastructure/offshore development	Action 2.1: Coastal and offshore development actions are assessed according to principles of ecological	**A 2.1 and 2.3 activity will be compliant** • Implementation of controls for reduced vessel speed around cetaceans can potentially reduce the underwater noise footprint

Relevant Plans/Advice	Threats	Actions required by Conservation/Recovery Plans	Relevant Control Measures
australis (DCCEEW, 2024) The long-term vision for the recovery of the southern right whale is that the population has increased in size to a level that the conservation status has improved, and the species no longer qualifies for listing as threatened under any of the EPBC Act listing criteria.		sustainable development to ensure the risk of injury, auditory impairment and/or disturbance to southern right whales is minimised. Action 2.3: Current information on species' occurrence, particularly in HCTS, BIAs, and historic high use areas, are used to inform planning, assessment, and decision-making on marine infrastructure development actions.	of a vessel and lower the likelihood of interaction above significant thresholds. Vessel Masters observe speed restrictions and proximity distances as required in the EPBC Regulations 2000 (Part 8) (EPS-04). Vessel crew has completed an EP-specific environmental induction covering the requirements for cetacean/vessel interaction distances consistent with EPBC Regulations 2000 (Part 8) and are familiar with the requirements (EPS -05).
	Anthropogenic underwater noise - Industrial noise and Vessel noise	Action 5.2: Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that it does not prevent any southern right whale from utilising the area or cause auditory impairment. Action 5.3: Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that the risk of behavioural disturbance is minimised.	**A 5.2 and A 5.3 activity will be compliant**: • Maintenance and inspection completed as scheduled reduces the generated noise emissions and associated impacts. Documented maintenance program is in place for ROV and cutting tools that provides a status on the maintenance of equipment (EPS-02). • Maintenance and inspection completed as scheduled reduces the generated noise emissions and associated impacts. Documented maintenance program is in place for equipment on vessels that provides a status on the maintenance of equipment (EPS-03). • Vessel Masters observe speed restrictions and proximity distances as required in the EPBC Regulations 2000 (Part 8) (EPS 04).

Relevant Plans/Advice	Threats	Actions required by Conservation/Recovery Plans	Relevant Control Measures
		Action 5.4: Ensure environmental assessments associated with underwater noise generating activities include consideration of national policy (e.g., EPBC Act Policy Statement 2.1) and guidelines related to managing anthropogenic underwater noise and implement appropriate mitigation measures to reduce risks to southern right whales to the lowest possible level. Action 5.5: Quantify risks of anthropogenic underwater noise to southern right whales, including studies aimed to measure physiological effects, behavioural disturbance, and changes to acoustic communication (e.g., masking of vocalisations) to whales.	• Vessel crew has completed an EP-specific environmental induction covering the requirements for cetacean/vessel interaction distances consistent with EPBC Regulations 2000 (Part 8) and are familiar with the requirements (EPS 05). • Competent crew shall maintain constant bridge-watch (EPS-46). • One Watchkeeper is focused on the operational task at hand, the other is responsible for maintaining the safe navigation of the vessel including keeping compliance with COLREGs Rule 5 which requires that the vessel at all times maintains a proper look out by sight, hearing and all available means appropriate to the prevailing circumstances and conditions, including marine fauna observations (EPS-47). **A 5.4 activity will be compliant** • Implementation of controls for reduced vessel speed around cetaceans can potentially reduce the underwater noise footprint of a vessel and lower the likelihood of interaction above significant thresholds. Vessel Masters observe speed restrictions and proximity distances as required in the EPBC Regulations 2000 (Part 8) (EPS-04). • Vessel crew has completed an EP-specific environmental induction covering the requirements for cetacean/vessel interaction distances consistent with EPBC Regulations 2000 (Part 8) and are familiar with the requirements (EPS-05). • Competent crew shall maintain constant bridge-watch (EPS-46). • One Watchkeeper is focused on the operational task at hand, the other is responsible for maintaining the safe navigation of the vessel including keeping compliance with COLREGs Rule 5 which requires that the vessel at all times maintains a proper look out by sight, hearing and all available means appropriate to the

Relevant Plans/Advice	Threats	Actions required by Conservation/Recovery Plans	Relevant Control Measures
			prevailing circumstances and conditions, including marine fauna observations (EPS-47). **A 5.5 activity will be compliant** • A complete evaluation of mitigation of risks and a literature review are discussed in Section 7.2.3.1
	Anthropogenic underwater noise - Seismic surveys and Aircraft noise	Not relevant to activity	Not relevant to activity

7.2.3.2 Pinniped Impacts

While Fur Seals may be encountered during the activity, the vessel and ROV noise levels that are likely to occur are well below the TTS and PTS SEL_{24h} noise effect criteria, and as such, the risk of auditory impairment or injury to otariid seals are not expected however avoidance may be expected in close proximity to the vessel. Given the short episodes of vessel activity using DP and given the species would only be transiting the area foraging (i.e. WSH-3 location is not located in proximity to colonies or haul-out sites), foraging impacts to the species is considered unlikely, particularly if fish are displaced temporarily (as below). The environmental risk to pinnipeds is assessed as negligible**.**

7.2.3.3 Marine reptiles

Marine turtles do not have external ears, but potentially use sound for navigation, locating prey and avoiding predators. Dow Piniak (2012) found that green, leatherback and hawksbill turtles can detect stimuli underwater and in air up to 1600 Hz, but their greatest sensitivity appears to be between 50-400Hz depending on the species (Dow Piniak, 2012). Studies have also found that the best sensitivity for loggerhead turtles is also between 100-400Hz (Martin et al., 2012).
Finneran et al. (2017) presented revised thresholds for sea turtle injury and hearing impairment (TTS and PTS). Their rationale is that sea turtles have best sensitivity at low frequencies and are known to have poor auditory sensitivity (Bartol & Ketten, 2006; Dow Piniak et al. 2012; Martin et al. 2012). Accordingly, TTS and PTS thresholds for turtles are likely more similar to those of fishes than to marine mammals (Popper et al. 2014). Even with this information, very little is known of the impact of noise on marine turtles. The impact of noise on turtle stocks may vary depending on whether exposure is short (acute) or long term (chronic) (DoEE, 2017).
As per cetaceans, it is considered that physiological impact to marine reptiles is highly unlikely due to the source of the vessels and ROV being below the thresholds for PTS and TTS, however behavioural impacts may be experienced in close proximity to the vessel. Given the low expected encounter rate of marine reptiles species in the area; it is very unlikely that behavioural impacts will be experienced. The environmental risk is negligible**.**

7.2.3.4 Fish Impacts

Noise sources are detectable by all fish species, although hearing ranges and sensitivities vary substantially between species (Dale et al., 2015). In fish, sensitivity to sound pressure appears to be related to whether they have gas-filled chambers in their sound transduction system. These enable fishes to detect sound pressure and extend their hearing abilities to lower sound levels and higher frequencies (Ladich and Popper, 2004; Braun and Grande, 2008).
Based on their morphology, Popper et al. (2014) classified fishes into three animal groups comprising:

- fishes with swim bladders whose hearing does not involve the swim bladder or other gas volumes
- fishes whose hearing does involve a swim bladder or other gas volume
- fishes without a swim bladder that can sink and settle on the substrate (sharks and rays)

According to Popper et al. (2014), vessel noise poses a low risk of causing fish mortality and a moderate risk of temporary threshold shifts (TTS) when fish are within tens of metres of the vessel. The primary impact is likely to be behavioural changes. Popper et al. (2014) identified a moderate risk of behavioural effects at distances ranging from tens to hundreds of meters from the noise source. While masking of sounds could occur up to thousands of meters away in extreme cases, typical effects are generally confined to within hundreds of meters. While fish may show an initial behavioural response, fish are known to quickly habituate to continuous noise

sources (Smith et al. 2004; Wysocki et al. 2006; Spiga et al. 2012; Nichols et al. 2015; Johansson et al. 2016; Holmes et al. 2017). In particular, many fish species are known to aggregate around the foundations of oil and gas platforms and subsea structures, despite operational noise.

Given the observed sound thresholds which may induce displacement in fish, it is possible that fish in close proximity to the vessel during DP activities and ROV cutting activities may be temporarily displaced. Given the short episodes of vessel activity, fish displacement is considered temporary with permanent displacement very unlikely. The environmental risk of this hazard to adult fish is considered negligible.
Additionally, based upon available literature fish larvae present in close proximity to an operating DP vessel are not expected to suffer mortality impacts (minimum source sound level for lethal effects is 220dB re 1µPa). On this basis negligible impacts are expected to fish larvae and population impacts are very unlikely. The environmental risk to fish larvae is assessed as negligible**.**

7.2.3.5 Shark Impacts

All fish species can detect noise sources, although hearing ranges and sensitivities vary substantially between species (Dale et al. 2015). Thresholds for PTS and recoverable injury are between 207 dB PK and 213 dB PK (depending on the presence or absence of a swim bladder), and the threshold for TTS is 186 dB SEL_{cum} (Popper et al. 2014). Given there is no exposure criteria for sharks and rays, the same criteria are adopted, though typically sharks and rays do not possess a swim bladder.
Consequently, no physiological impact to shark species is expected given the species biology. It is possible that temporary localised shark displacement may occur during periods of vessel DP activity. Given the short episodes of vessel activity using DP and given shark species are likely transiting the area it is considered unlikely permanent impacts to the species will be realised. The environmental risk to sharks is assessed as negligible**.**
A breeding BIA for the great white shark overlaps the operational area (Figure 5.4), however temporary and localised behavioural response may result from the noise levels emitted, but these will not be at levels that could cause mortality or injury to marine fauna or cause a decrease in local population size or area of occupancy of species.

7.2.3.6 Invertebrates Impacts

Available scientific studies identify that acoustic sound has negligible impacts (i.e. physical or behavioural impacts) to adult or larval crustaceans. Given the short duration of vessel DP activities, impacts to adult or larval crustaceans are considered very unlikely and the risk is considered negligible**.**
Available scientific studies associated with acoustic impacts to scallop species identify minimal-to-no impacts to adult scallops from sound although more recent IMAS studies identify that large acoustic sound sources in close (near-field) proximity to adult scallops may cause increased mortality (significance to be established). Sound source levels generated by vessels operating in DP are significantly lower than the low frequency source levels utilised by IMAS which may have impacts to adult scallops and is not located within 4.8m of the seabed (as per IMAS study). Negligible impacts are expected to adult scallops from vessel activities based upon the available literature. As other fishing vessels operate within the area, and sound impacts from these vessel activities have not been identified as a threat to scallops, it is considered unlikely that vessels operating on DP will have impacts. The environmental risk is assessed as negligible**.**

7.2.4 IMPACT ASSESSMENT

Table 7.6 presents the impact assessment for the sound generated from decommissioning activities.

Table 7-6 Impact assessment for the Sound generated from decommissioning activities

Summary

Summary of impacts	Potential effect on marine fauna, including attraction, increased stress levels, disruption, behavioural changes, localised avoidance, temporary physiological impacts.
Extent of impact	Localised –around vessel and Operational Area.
Duration of impact	Short-term for the duration of onsite activity.
Level of certainty of impacts	HIGH – The vessel and decommissioning activities will generate noise during operations and entering or exiting the area.
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.

Environmental Controls and Performance Measurement		
EPO 2: No injury or mortality to EPBC Act 1999 listed fauna during activities		
Control Measures	EPS	Measurement criteria
Immersible equipment planned maintenance system in place to ensure it is operating efficiently and not producing excessive noise.	EPS-02: Maintenance and inspection completed as scheduled reduces the generated noise emissions and associated impacts. Documented maintenance program is in place for ROV and cutting tools that provides a status on the maintenance of equipment	PMS records verify equipment is operational to manufacturer's specifications.
Vessel planned maintenance system in place to ensure it is operating efficiently and not producing excessive noise.	EPS-03: Maintenance and inspection completed as scheduled reduces the generated noise emissions and associated impacts. Documented maintenance program is in place for equipment on vessels that provides a status on the maintenance of equipment	PMS records verify propulsion system is operational to manufacturer's specifications.

Support vessels will comply with EPBC Regulations 2000 (Part 8)	EPS-04: Implementation of controls for reduced vessel speed around cetaceans can potentially reduce the underwater noise footprint of a vessel and lower the likelihood of interaction above significant thresholds. Vessel Masters observe speed restrictions and proximity distances as required in the EPBC Regulations 2000 (Part 8) Reg. 8.05 & 8.06 respectively, where safe to do so: • Within the caution zone for a cetacean (including a calf) (within 300 m of a cetacean), the Vessel Master must operate the vessel at a constant speed of less than 6 knots and minimise noise; and • If a calf appears within an area that means the vessel is then within the caution zone of the calf, the Vessel Master must immediately stop the vessel and turn off the vessel's engines or disengage the gears or withdraw the vessel from the caution zone at a constant speed of less than 6 knots.	Vessel Masters provided the induction with speed restriction <6 knots within the operational area. Incident reports record non-compliances with EPBC Regulations 2000 - Part 8 Division 8.1 (interacting with cetaceans)
Environmental Induction	EPS-05: Vessel crew has completed an EP-specific environmental induction covering the requirements for cetacean/vessel interaction distances consistent with EPBC Regulations 2000 (Part 8) and are familiar with the requirements. This will include the provision of appropriate reference material for marine megafauna identification, requirements in whale observation, species identification, reporting requirements and adaptive management plan requirements. Observation training to ensure that obligations with respect to marine mammals are observed while they are in charge of the vessel. • CHPL verifies the crew training as part of pre-hire and routine EP compliance inspections. • The vessels have multiple pairs of binoculars available to Watchkeepers • Marine megafauna identification information is available onboard.	Induction records verify that vessel crews have completed an environmental induction.

Seafarer certification	EPS-44: Vessel crew are trained and competent, in accordance with Flag State regulations, to navigate vessels	Training records show crew competencies
Constant bridge watch	EPS-46: Competent crew shall maintain constant bridge-watch.	Bridge log or equivalent.
Trained bridge crew undertake continuous observations	EPS-47: One Watchkeeper is focused on the operational task at hand, the other is responsible for maintaining the safe navigation of the vessel including keeping compliance with COLREGs Rule 5 which requires that the vessel at all times maintains a proper look out by sight, hearing and all available means appropriate to the prevailing circumstances and conditions, including marine fauna observations.	Bridge log or equivalent.
Implement adaptive management procedure for DP start-up.	EPS 48: Adaptive management measures are intended to ensure that no whales are in proximity to vessels before commencing DP operations. • Trained crew monitor for whales during daylight hours for 30 minutes prior to commencing DP operations. • Proceed with DP operations only when no whales have been sighted within2 km of the vessel (or to the limit of visibility if conditions prohibit observations to 2 km) over the 30-minute monitoring period. • Commencing DP operations during nighttime hours: ○ Trained crew to monitor for whales 30 minutes before sundown prior to undertaking nighttime DP operations. ○ Proceed with night time DP operations only when no whales have been sighted within 2 km of the vessel (or to the limit of visibility if conditions prohibit observations to 2 km) over the 30 minute monitoring period 30 minutes before the preceding sundown.	Bridge log or equivalent details periods of observations and timing of DP operations

Impact consequence (residual)		
Negligible		
Demonstration of ALARP		
A 'low' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered and rejected are summarised below.		
Control considered	**Potential benefit**	**Reasoning for rejection**
Provide additional muffling on machinery, or design to reduce noise emissions	Reduce potential noise emissions in the marine environment	Machinery is generally designed with human health hearing requirements taken into consideration, reducing operating noise to as low as efficiently and cost effectively as possible. The level of noise impact from vessel emissions is considered to be negligible and further reduction is not feasible.
Do not undertake the activity in times/ areas of sensitivity for pygmy blue whale	Reduce potential impacts to fauna at key periods such as breeding or migration	The level of noise impacts is expected to only result in behavioural impacts if any impacts do occur and given the short duration of the activity and dependence on weather windows and vessel availability, this was considered grossly disproportionate. The location of the activity cannot be amended. A foraging BIA for pygmy blue whale overlap the Operational Area To avoid these times of the year when key behaviours are occurring is difficult when a vessel of opportunity is being selected and given the weather in the area can result in very high seas and conditions that are not conducive to the removal activity. To ensure the safety of personnel and a successful removal activity, a favourable weather window and the right vessel must be selected which may be at any time of year.

Do not undertake the activity in areas/times of sensitivity for the southern right whale	Reduce potential impacts to fauna at key periods such as breeding or migration	The level of noise impacts is expected to only result in behavioural impacts if any impacts do occur and given the short duration of the activity and dependence on weather windows and vessel availability, this was considered grossly disproportionate. The location of the activity cannot be amended. A migration (April to October) BIA for the southern right whale overlaps the Operational Area while a reproduction (May to September) is located within the spill EMBA and 10.1km from the Operational area. Avoiding these times of the year when key behaviours are occurring is difficult when a vessel of opportunity is being selected and given the weather in the area can result in very high seas and conditions that are not conducive to the removal activity. To ensure the safety of personnel and a successful removal activity, a favourable weather window and the right vessel must be selected which may be at any time of year. Given the expected impacts are associated with behavioural response only, and will not impact on SRW within the breeding BIA due to distance, it is considered grossly disproportionate to avoid sensitive times of the year for a short duration, low impact activity.
Do not undertake the activity in areas/times of sensitivity for the great white shark	Reduce potential impacts to fauna at key periods such as breeding or migration	The level of noise impacts is expected to only result in behavioural impacts if any impacts do occur and given the short duration of the activity and dependence on weather windows and vessel availability, this was considered grossly disproportionate. The location of the activity cannot be amended. A breeding (nursery area) for great white sharks overlaps the Operational Area, however impacts to fish and sharks are considered negligible from the activity due to vessel noise posing a low risk of causing fish mortality and a moderate risk of temporary threshold shifts (TTS) when fish are within tens of metres of the vessel. Avoiding these times of the year when key behaviours are occurring is difficult when a vessel of opportunity is being selected and given the weather in the area can result in very high seas and conditions that are not conducive to the removal activity. To ensure the safety of personnel and a successful removal activity, a favourable weather window and the right vessel must be selected which may be at any time of year.

Anchor vessel instead of using DP to minimise noise source	Reduce potential impacts to fauna from the vessel noise	This would result in further seabed disturbance from the deployment of anchors. Anchoring the vessel does not allow it to hold its position at the wellhead for the cutting activities as easily as on DP and could result in a failure to cut the wellhead and multiple attempts to undertake. DP is considered the most reliable and appropriate type of vessel positioning to use for this activity.
Turn off DP if a whale is seen within 2 km of vessel.	Reduce potential impacts to fauna from the vessel noise	If the vessel DP is turned off mid-way through activities, there is the risk of damage to the ROV, cutter and/or the subsea infrastructure. With the controls in place the potential for physiological or behavioural impacts to whales is significantly reduced, combined with the short duration of the activity, this option was considered grossly disproportionate to the potential benefit.
Improve baseline understanding of southern right whale acoustic communication to better inform potential impacts from anthropogenic underwater noise as per National Recovery Plan for Southern right whale	Increase the knowledge of potential impacts. However, noise emissions from decommissioning are already well documented.	Cost is disproportionate to increase in environmental benefit. The level of noise impact from vessel emissions is considered to be negligible and due to the short duration (7 days) of the activity only temporary behavioural impacts may occur and will not affect the overall behaviour of the species.
Quantify risks of anthropogenic underwater noise to southern right whales, including studies aimed to measure physiological effects, behavioural disturbance, and changes to acoustic communication (e.g., masking of vocalisations) to whales as per National Recovery Plan for Southern right whale.	Increase the knowledge of potential impacts to southern right whale due to anthropogenic underwater noise.	Cost is disproportionate to increase in environmental benefit. The level of noise impact from vessel emissions is considered to be negligible and due to the short duration (7 days) of the activity only temporary behaviour may occur.

Dedicated Marine Mammal Observer (MMO) (as per EPBC Policy Statement 2.1 – Part B.1)	Improve capability to detect and identify marine mammals that may be affected by vessel and activity noise.	Additional cost of contracting specialist Marine Fauna Observers while the risk to all EPBC Act–listed marine fauna cannot be reduced due to variability in timing of environmentally sensitive periods and unpredictable presence of some species. Vessel masters are keeping watch for potential hazards. Potential impacts are minimal and low and due to the short duration of the activities the potential for interaction is considered low and the potential impacts are limited to behavioural impacts for marine mammals.
Pre-survey research would involve sending a dedicated research vessel to the survey area ahead of time. Allows for survey planning around areas of peak migration and aggregation, therefore reducing risks to marine fauna (EPBC Policy Statement 2.1 – Part B.2)	Increased knowledge of marine fauna activity in the area.	Cost is disproportionate to increase in environmental benefit.
Spotter planes/vessels sent to spot fauna ahead of the vessels over whole survey area (EPBC Policy Statement 2.1 – Parts B.2 and B.3).	Increased detection of individuals or groups of marine fauna which may be displaced or disturbed during night-time operations when visibility is low.	Cost is disproportionate to increase in environmental benefit.
Passive acoustic monitoring (PAM) involves using hydrophones subsea to detect and monitor the presence of vocalising marine mammals and can assist in the confirmation of the presence of vocalising cetaceans (EPBC Policy Statement 2.1 – Part B.5).	Potential to identify toothed cetaceans that do not breach the sea surface (for example, on long dives).	Cost is disproportionate to increase in environmental benefit.
Demonstration of Acceptability		
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).	
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.	

Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding displacement or interference.	

Legislative context	The EPS outlined in this EP align with the requirements of:
	• *OPGGS Act* 2006 *(Cth):*
	  ○ Section 280(2) – requires that a person carrying on activities in an offshore area under the permit, lease licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others).
	  ○ Part 6.6 (Safety zones and the area to be avoided).
	• *Navigation Act* 2012 *(Cth):*
	  ○ Chapter 6 (Safety of navigation).
	• *EPBC Regulations Part 8*
	  ○ *Reg. 8.05 & 8.06*	

Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity.	
Environmental context	*Marine reserve management plans*	Not triggered by this hazard.
	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	Recovery Plan for Marine Turtles in Australia (Environment Australia 2003) Blue Whale Conservation Management Plan 2015–2025 (DoE 2015b) National Recovery Plan for the Southern Right Whale *Eubalaena australis* (DCCEEW, 2024)
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are short-term (less than 7 days) and localised with intermittent noise from the activity. The sound generated is expected to be similar from the existing Bass Strait oil and gas platforms and below the threshold for temporary threshold shifts (TTS) and PTS for the species that may be in in the vicinity. Residual impact consequences are considered low with temporary and localised impacts (behavioral) expected.

	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short-term (less than 7 days) and localised, the activity is well understood, and good practice is well defined, and the impact assessment includes consideration of recovery plans and Conservation Management plans for marine fauna.
	Principle C: 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 impacts from this activity are only short-term (less than 7 days) and localised (within 1.4 km), and there are no impacts to the health, diversity or productivity of the environment for future generations as once the activity is completed the noise will be ceased.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
None required.		
Record Keeping		
Vessel logs. Audit logs. Incident reports.		

7.3 RISK: ATMOSPHERIC EMISSIONS

7.3.1 HAZARD

Atmospheric emissions generated from decommissioning activities is associated with the vessel operation and decommissioning operations, and when entering and exiting the area. Atmospheric emissions can be classified into two categories:

- Atmospheric pollutants (non-greenhouse gas emissions) are gases and particulates from an activity, or piece of machinery, which have a recognised adverse effect on human health and/or flora and fauna. The main emissions responsible for these effects include carbon monoxide (CO), oxides of nitrogen (NOx), sulphur dioxide (SO2), particulate matter less than 10 microns (PM10), non-methane volatile organic compounds (VOCs), BTEX (benzene, toluene, ethylbenzene and xylenes), which are specific VOCs of interest
- Greenhouse gas (GHG) emissions are those gasses within the atmosphere that absorb long-wave radiation, and thus trap heat reflected from the Earth's surface. The main gases responsible for this effect include carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O). Other greenhouse gases include perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF6).

GHG and atmospheric emissions are generated by the support vessels and if helicopters are needed in a Medivac scenario. Sources of emissions are from fuel use in combustion engines and fugitive emissions as well as small volumes of refrigerants. The types of volumes of emissions vary depending on the types of activities undertaken and include:

- Travelling to and from the field
- Undertaking safety standby activities
- Minimal emissions if vessels are at anchor
- Undertaking ROV work

7.3.2 KNOWN AND POTENTIAL SOCIO-ECONOMIC IMPACTS

The primary concern arising from air emission generation from vessel activities is the potential reduction on air quality in the immediate vicinity affecting seabirds and humans in the operational area. Under normal circumstances, any gaseous emissions from the vessels will quickly dissipate into the surrounding atmosphere. As the WSH-3 and Wardie-1 conductor lie in offshore waters, the combustion of fuels in such remote locations will not impact on air quality in coastal towns or other sensitive locations. Non-GHG emissions, such as NOX and SOX, can lead to a reduction in local air quality. GHG emissions are recognised to also contribute to the greenhouse gas emissions loading globally.

7.3.3 EVALUATION OF ENVIRONMENTAL RISKS

Air emissions will be similar to other vessels operating in the region for both petroleum and non-petroleum activities. All vessels are required to comply with MARPOL air emissions regulations, by using low sulphur fuel and NOx emissions controls as applicable to engine age and type. The support vessels main engines and equipment such as pumps, cranes, winches, power packs and generators require MDO for fuel. The quantities of gaseous emissions are relatively small and will quickly dissipate into the surrounding offshore atmosphere. Due to the volumes and highly dispersive nature of the emissions no adverse impacts to seabirds or humans are expected.

As the activity will occur in open-ocean offshore waters, the combustion of fuels and in such remote locations will not impact on air quality in coastal towns, the nearest being a small town (~16 km NW). The quantities of

gaseous emissions are relatively small and will quickly dissipate into the surrounding atmosphere. Air emissions will be similar to other vessels operating in the region for both petroleum and non-petroleum activities.

Potential impacts are expected to be short-term, and relate to localised reduction in air quality, limited to the immediate vicinity of the emissions release. Atmospheric emission impacts are not expected to have direct or cumulative impacts on sensitive environmental receptors or be above National Environmental Protection (Ambient Air Quality) measures.

The quantities of gaseous and solid (powder) emissions are relatively small and will, under normal circumstances, quickly dissipate into the surrounding atmosphere. Short-term behavioural impacts to seabirds could be expected if they overfly the location; they may avoid the area. No decrease in local population size or area of occupancy of species, loss or disruption of critical habitat, disruption to the breeding cycle or introduction of disease.

7.3.4 IMPACT ASSESSMENT

Table 7.7 presents the impact assessment for the Atmospheric emissions generated from decommissioning activities.

Table 7-7 Impact assessment for the atmospheric emissions generated from decommissioning activities.

Summary		
Summary of impacts	May result in a temporary, localised reduction of air quality in the environment.	
Extent of impact	Localised – immediately around vessel and Operational Area.	
Duration of impact	Short-term for the duration of onsite activity.	
Level of certainty of impacts	HIGH – The vessel and decommissioning activities will generate air emissions during operations and entering or exiting the area.	
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.	
Environmental Controls and Performance Measurement		
EPO 3: Reduce impacts to air and water quality from planned discharges and emissions from the activities		
Control Measures	EPS	Measurement criteria
International Air Pollution Prevention (IAPP) Certificate valid	EPS-06: Vessels (as appropriate to vessel class) will maintain a current International Air Pollution Prevention (IAPP) Certificate or equivalent which confirms that the following measures during the activity are in place: prevent ozone-depleting substance (ODS) emissions; and reduce NOx, SOx	Valid and current IAPP

Vessels compliant with Marine Order 97	EPS-07: Vessels (as appropriate to vessel class) will comply with Marine Order 97 (Marine pollution prevention – air pollution), which requires vessels to have a valid IAPP Certificate (for vessels > 400 tonnage) and use of low sulphur diesel, when possible (required to be less than 0.50% m/m as of 1 March 2020)	Valid and current IAPP
No heavy fuel oil used on vessel	EPS-08: Vessels will not utilise HFO on board	Fuel bunkering records

Impact consequence (residual)
Negligible

Demonstration of ALARP		
A 'low' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered and rejected are summarised below.		
Control considered	**Potential benefit**	**Reasoning for rejection**
All emissions producing equipment is substituted for equipment that does not produce emissions	Reduces the potential for atmospheric emissions	All equipment as listed is required; no opportunities for substitution were identified.
Equipment is re-designed/ replaced with equipment designed to reduce emissions.	Reduces the potential for atmospheric emissions or improves the quality and quantity	Risk and impact reduction are achieved through planned maintenance ensuring clean and efficient running of engines.

Demonstration of Acceptability	
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.
Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding atmospheric emissions.

Legislative context	The EPS outlined in this EP align with the requirements of:
	• *OPGGS Act* 2006 *(Cth):*
	  ○ Section 280(2) – requires that a person carrying on activities in an offshore area under the permit, lease licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others).
	  ○ Part 6.6 (Safety zones and the area to be avoided).
	• *Navigation Act* 2012 *(Cth):*
	  ○ Chapter 6 (Safety of navigation).
	• *Marine Order 97*
	  ○ Marine pollution prevention – air pollution

Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity.	
Environmental context	*Marine reserve management plans*	Not triggered by this hazard.
	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	- National Light Pollution Guidelines for Wildlife (DCCEEW, 2023b) - Recovery Plan for Marine Turtles in Australia 2017–2027 (DoEE, 2017) - Wildlife Conservation Plan for Seabirds (DAWE, 2020) - Wildlife Conservation Plan for Migratory Shorebirds (DoE 2015c) - National Recovery Plan for the Southern Right Whale *Eubalaena australis* (DCCEEW, 2024) - Conservation Management Plan for the Blue Whale - A Recovery Plan under the EPBC Act 1999 (Commonwealth of Australia, 2015) The above and all recovery plans for the species identified in the operational area have climate change listed as a potential threat.
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are only short-term and localised. It is recognised that GHG are persistent pollutants, so whilst their generation is short term the impact of these emissions can contribute to overall climate change impacts. The nature and scale of this activity is short term with negligible impact to air emissions.
	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short-term and localised. There is no scientific uncertainty, as the activity is commonplace, well understood, and good practice is well defined.

	Principle C: 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 impacts from this activity are only short-term and localised, and there are no impacts to the health, diversity or productivity of the environment for future generations. It is recognised that GHG are persistent pollutants, so whilst their generation is short term the impact of these emissions can contribute to overall climate change impacts which may affect future generations. However, it is considered that removing the infrastructure from the area is of benefit for future access and to protect the seabed and surrounding area from potential future impact through infrastructure degradation over time; therefore the low volume of GHG emissions emitted from the short duration activity is considered to be outweighed by the benefit of infrastructure removal and therefore maintaining the productivity of the existing environment.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
None required.		
Record Keeping		
Fuel records. IAAP certificate. Audit logs.		

7.4 RISK: LIQUID WASTE DISCHARGED FROM VESSELS

7.4.1 HAZARD

Potential liquid discharges generated from vessels and routinely discharged to the marine environment may include:

- Slops water (Deck drainage, bilge water, tank washing)
- Cooling water
- Desalination Brine

- Treated Sewage
- Greywater
- Putrescible food waste
- Hydraulic fluid discharge from ROV or tool

7.4.2 KNOWN AND POTENTIAL ENVIRONMENTAL IMPACTS

The small volumes discharged may cause localised nutrient enrichment, organic and particulate loading, toxic impacts to marine fauna, thermal impacts and increased salinity.

Impacts associated with planned operational discharges are typically restricted to the operational area, given the low quantities of discharge and the short duration of the activity. There is a foraging BIA for pygmy blue whale, a breeding BIA for great white shark, a migration BIA for southern right whale, and several foraging BIAs for birds, therefore there is the potential for temporary behavioural effects as a result of liquid waste discharges.

Sewage

The routine discharge of sewage is likely to result in localised increases in nutrient concentrations, levels of phytoplankton and bacterial activity, and biological oxygen demand (BOD).

In terms of BOD, the open water conditions and swift currents of the receiving environment will dilute the discharge and prevent environmentally significant reductions of oxygen levels in the water column (Somerville et al. 1987, cited in Swan et al. 1994).

Some fish and oceanic seabirds may be attracted to the vessels by the discharge of sewage. This attraction may be either direct, in response to increased food availability, or secondary, as a result of prey species being attracted to the area. However, given the small quantities and short duration of the activity, any attraction is likely to be negligible and is not expected to result in adverse impacts at an ecosystem or population level.

Deck drainage and bilge water

Discharges from vessels may include residues of chemicals used for cleaning decks. The potential impact associated with the discharge of treated deck drainage and bilge water is chemical toxicity to marine species within the direct vicinity of the vessel. If not properly managed, the discharge of oily water has the potential to create an oil sheen on surface waters and a temporary highly localised decline in water quality and toxic effects to marine fauna. Toxicity to marine organisms would be from trace amounts of dissolved hydrocarbons in the oily water drainage after treatment. Given that oil and grease residues in oily water drainage will be in low concentrations, the potential for impact is low and would be further reduced due to the strong tidal movements experienced in the region and the naturally turbid environment.

There may be a localised and temporary (hours) reduction in water quality in the immediate vicinity of the release. Toxicity impacts to marine fauna from the release of chemicals and oily water are unlikely to eventuate because:

- strong ocean currents result in the discharge being further diluted upon release to the marine environment, so the duration of exposure of chemicals to fauna will be minimal
- potential discharges will be intermittent and temporary within the operational area

Bilge water

If not properly managed, the discharge of oily water has the potential to create an oil sheen on surface waters and a temporary localised decline in water quality and toxic effects to marine fauna. Toxicity to marine organisms would be from trace amounts of dissolved hydrocarbons in the oily water drainage after treatment. Given that oil and grease residues in oily water drainage will be in low concentrations, the potential for impact is low and would be further reduced due to the strong tidal movements experienced in the region and the naturally turbid environment.

Dispersion and biodegradation of potentially contaminated oily water drainage is expected to be rapid and highly localised resulting in no long-term or adverse effects on water quality or marine ecology.

Cooling water

The potential impacts arising from discharge of cooling water include:

- Thermal impacts to marine organisms
- Decline in water quality associated with lowered dissolved oxygen concentrations as a result of elevated water temperature.

When discharged to the sea surface, cooling water will initially be exposed to the atmosphere and subsequently air cooled. Upon reaching sea surface cooling water will then be subjected to turbulent mixing and some transfer of heat to surrounding waters. The plume will disperse mainly within surface waters being thermally buoyant, primarily in the direction of prevailing tidal currents (northwest–southeast).

Discharge of cooling water has the potential to cause changes in marine ecology through elevated temperatures, as well as the presence of anti-fouling biocides with trace chemical concentrations of copper and aluminium ions being discharged. These small amounts of biocides will disperse rapidly on discharge to concentrations below levels of environmental concern to marine biota especially demersal fauna.

Fish and plankton are likely to be at greatest risk from cooling water discharge impacts since they are most likely to be attracted to the discharge location (fish) or entrained within the discharge plume (plankton). Fish and plankton are relatively small organisms that may experience increased body temperature and altered physiological processes (e.g. increased respiration rate and oxygen demand).

Given the hydro-dynamically active open water environment surrounding the Operational Area, it is expected that the surface discharge of cooling water would rapidly disperse, cool and dilute in the surrounding waters, therefore temperature and biocides leading to changes to water quality or behavioural changes in marine species would be negligible. Only receptors in close proximity to the discharge point have the potential to be impacted with full recovery predicted within weeks.

Desalination brine

The potential impacts of desalination brine discharge on the environment include:

- Alteration of physiological processes of exposed biota
- Reduced water quality.

On discharge to the sea, desalination brine will sink and disperse in the currents. Given that discharged brine will have a salinity of ~10% greater than ambient seawater the largest increase of salinity experienced would be approximately 10% in the immediate vicinity of the discharge point. Most marine species are able to tolerate short-term fluctuations in the order of 20–30% (Walker and McComb 1990), and it is expected that exposed organisms such as plankton, pelagic invertebrates and fish would be able to tolerate short-term exposure to the slight (maximum 10%) increase in salinity caused by the discharged brine. For large marine species that may temporarily use surface waters such as marine turtles, mammals and seabirds, the effect of a slight increase in salinity is expected to be negligible.

7.4.3 EVALUATION OF ENVIRONMENTAL IMPACTS

Vessel discharges can be eliminated given the proximity of the vessel to its shore base. All waste items will be removed from the vessel prior to departure from shore, and any new waste generated returned to shore.

The ROV and tools used are a closed loop system so no discharge is planned.

As the activity is located in an open oceanic environment where tides and currents would quickly dilute and disperse the planned discharges, and the activity is short-term (days) and transient, it is not expected that impacts to the physical environment or fauna will occur.

Impacts to water quality will be experienced in the discharge mixing zone which will be localised and will occur only as long as the discharges occur (in other words, no sustained impacts). Therefore, recovery will be measured in hours to days. Changes to water quality may result in an alteration to marine fauna behaviour. Sensitive receptors that may be impacted include fish at surface, marine turtles and mammals, and seabirds.

Any effects on water quality are expected to be within the surface waters only and have no effect on seabed receptors.

As such, only short-term behavioural impacts are expected with no decrease in local population size or area of occupancy of species, nor loss or disruption of critical habitat, disruption to the breeding cycle or introduction of disease.

7.4.4 IMPACT ASSESSMENT

Table 7.8 presents the impact assessment for liquid waste discharged from the vessel.

Table 7-8 Impact assessment for liquid waste discharged from the vessel.

Summary		
Summary of impacts	The small volumes discharged may cause localised nutrient enrichment, organic and particulate loading, toxic impacts to marine fauna, thermal impacts and increased salinity.	
Extent of impact	Highly localised – radius of impact <5m.	
Duration of impact	Short-term (duration of activity). Water quality conditions will return to normal within minutes to hours of cessation of discharges.	
Level of certainty of impacts	HIGH – The decommissioning activities will generate operational liquid waste emissions during operations.	
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.	
Environmental Controls and Performance Measurement		
EPO 4: Reduce impacts to air and water quality from planned discharges and emissions from the activities		
Control Measures	EPS	Measurement criteria
Oily water filtering and monitoring equipment fitted and maintained	EPS-09: If required under MARPOL, support vessels have oily water filtering and monitoring equipment that is compliant (e.g. discharges oily water with OIW <15 mg/L) and surveyed/ maintained as per MARPOL	Maintenance records IOPP certificate
Oily sludge is contained	EPS-10: Oily residue (sludge) is not discharged to sea but is contained and transferred to shore for disposal.	Oil Record Book
Potable water systems are maintained	EPS-11: Potable water systems maintained in accordance with the PMS	PMS shows maintenance has been satisfactorily completed as scheduled

Vessels meets operational needs and is maintained	EPS-12: Pursuant to MARPOL, vessel has a current International Sewage Pollution Prevention (ISPP) Certificate or equivalent which confirms that required measures to reduce impacts from sewage disposal are in place	Valid ISPP Certificate
Garbage record book maintained	EPS-13: Vessel's garbage record book maintained to record quantities of food waste in accordance with MARPOL	Garbage Record Book
Waste generated during operations will be managed in accordance with the vessel waste Management Plan	EPS-14: Waste materials are stored in fit for purpose storage containers and/or lifting skips, labelled and equipped with lids / covers to prevent loss of material during storage and handling.	Garbage Record Book shall be maintained on all facilities in accordance with MARPOL 73/78 Annex V Regulation 9
	EPS-15: Hazardous wastes will be managed in accordance with relevant legislation including MARPOL 73/78 Annex III	A waste register will be maintained to show that hazardous wastes are being collected and returned onshore for disposal

Impact consequence (residual)
Negligible
Demonstration of ALARP
A 'negligible' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered and rejected are summarised below.

Control considered	**Potential benefit**	**Reasoning for rejection**
Wastes stored onboard and transferred to shore for onshore treatment and disposal	Reduces potential for impact to the marine environment	Costs associated with complete reengineering such that wastes contained onboard and disposed of onshore, onshore treatment and disposal costs and increase in fuel consumption due to multiple vessel transfers would be disproportionate to the environmental benefit gained given the rapid dilution in offshore water and low potential impact from discharges. In addition, transfers increase the risks of spills/ leaks and safety risks to personnel during transfer operations.

Demonstration of Acceptability	
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).

Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.	
Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding liquid waste discharged from vessels.	
Legislative context	The performance standards outlined in this EP align with the requirements of the: • *OPGGS Act* 2006 (Cth): ○ Section 280(2) – a person carrying on activities in an offshore area under the permit must carry on those activities in a manner that does not interfere with…the conservation of the resources of the sea and seabed…..to a greater extent than is necessary for the reasonable exercise of the rights and performance of the duties of the first person. • Protection of the Sea (Prevention of Pollution from Ships) Act 1983, which in Australian waters is enacted by the Marine Orders.	
Industry practice	The consideration and adoption of the controls demonstrates that BPEM is being implemented for this activity.	
Environmental context	*Marine reserve management plans*	Not triggered by this hazard.
	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	Recovery Plan for Marine Turtles in Australia (DoE 2017) Recovery Plan for Threatened Albatrosses and Giant Petrels (DSEWPaC, 2011)
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. Low impacts are expected from liquid discharges given the discharge is typically restricted to the operational area (radius of impact <5m), low quantities of discharge and the short duration of the activity (less than 7 days).

	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short-term (less than 7 days) and highly localised (radius of impact <5m). There is no scientific uncertainty, as the activity is well understood, and good practice is well defined and the impact assessment includes consideration from recovery plans for marine fauna.
	Principle C: 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 impacts from this activity are short-term (less than 7 days) and highly localised (radius of impact <5m), and there are no impacts to the health, diversity or productivity of the environment for future generations. Once the activities are completed the discharges will be ceased and the water quality conditions will return to normal within minutes to hours of cessation of discharges.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
None required.		
Record Keeping		
ISPP Certificate Garbage Record Book. PMS. Oil Record Book Vessel Logs. Audit Logs. Incident reports.		

7.5 RISK: DISPLACEMENT OF OR INTERFERENCE WITH THIRD-PARTY VESSELS AND ACTIVITIES

7.5.1 HAZARD

A 300-m radius PSZ is gazetted around the WSH-3 well and Wardie-1 conductor to minimise the risk of damage from third-party vessels (e.g., commercial fishing vessels) and minimise risk of damage to those vessels (e.g., as a result of trawl gear becoming entangled on the wellhead).

The WSH-3 wellhead and Wardie-1 conductor represents a potential hazard to fishing equipment should the PSZ be breached. It may also represent a loss of catch (and thus economic losses) should fishing equipment become snagged on the wellhead and damaged. This PSZ will remain in place during the activity, and once the infrastructure has been removed, the PSZ will no longer be required.

7.5.2 KNOWN AND POTENTIAL SOCIO-ECONOMIC IMPACTS

The risk of displacement of or interference with third-party vessels and fishing activities is damage to or loss of fishing equipment and/or loss of commercial fish catches (resulting in financial loss) as a result of collision or entanglement with the wellhead. The gazetted PSZ enforces a 300-m exclusion zone (0.283 km^2) to maximise safety in the area immediately around the wellhead and to reduce the risk of fishing equipment being damaged on the wellhead structure. During the removal activity, the vessel will be undertaking activities within the gazetted PSZ.

Receptors most at risk are:

- Commercial fishing vessels; and
- Commercial fishing equipment (e.g., trawl nets).

The risk of displacing merchant vessels is very low given that the Operational Area occurs within the Bass Strait ATBA, which prohibits vessels greater than 200 gross tonnes being present in the ATBA without NOPSEMA's permission.

7.5.3 EVALUATION OF ENVIRONMENTAL RISKS

Displacement to third-party vessels

The presence of the WSH-3 well/Wardie-1 conductor and the PSZ excludes other users of the marine environment in order to protect the wellhead and for the safety of other marine users. However, displacement of third-party vessels by the WSH-3 well/Wardie-1 conductor is unlikely because the Operational Area is:

- Contained entirely within the Bass Strait ATBA; and
- Distant from the Bass Strait shipping fairway (see Section 5.7.8).

If displacement was to occur, it would result in a negligible increase in travel time and fuel cost at most, but in the context of an entire journey, this is not considered significant.

The consequence of displacing other users, such as commercial and/or recreational fishers, is considered negligible given the sparse use of the area by fishers (see Section 5.7.3) and the very small exclusion area (0.283 km^2) compared to the total area of fishing grounds. The AHO will be notified prior to activities commencing to ensure notices to mariners are issued and therefore others users are aware of the activity. No significant concerns were raised during consultation regarding activities occurring at the location (Table 4.5).

An assessment of other activities that could occur in the vicinity of the wellhead removal is provided in Table 7.9; no comment was received from ExxonMobil during the consultation process regarding the proposed activities in relation to timing, location or potential interaction.

Table 7-9: Assessment of other activities that may be occurring at the same time in the vicinity of the proposed works

Name of EP	Titleholder details	Title details/ Region	Timing & Duration	Activity Description
Gippsland Basin Geophysical and Geotechnical Investigations – under assessment	ExxonMobil Australia Pty Ltd	VIC/L01. VIC/RL1, VIC/L02 and VIC/L18 located in the Gippsland Basin of the eastern Bass Strait.	Any time during the life of the EP, being five years from the date of acceptance. 20-60 days in duration.	Geophysical and Geotechnical Investigations (development of new and existing gas fields, development around existing facilities, plug and abandonment, decommissioning and drilling).
Jack-Up Rig Plug and Abandonment – under assessment	ExxonMobil Australia Pty Ltd	VIC/L01 VIC/RL1	The activity is due to commence in the fourth quarter of 2024 with an estimated total program duration of approximately 3-4 months with the expected completion at the start of 2026.	Subsea well abandonments – decommissioning.

Damage to or loss of fishing equipment and loss of catch

Commercial fishing vessels are prohibited from operating within the PSZ. Interactions between the WSH-3 well/Wardie-1 conductor and fishing vessels is likely to be minimal, because:

- The PSZ has been in effect since June 2008 (without any reported incidents to date);
- There is a low level of fishing in the Operational Area;
- The PSZ is located entirely within the Bass Strait ATBA; and
- Large vessels use sophisticated navigation aids, which will include the presence of the WSH-3 PSZ.

Vessel collision (or more likely given the water depth, entanglement of trawl fishing gear) with the WSH-3 wellhead or Wardie-1 conductor may result in gear becoming detached from the fishing vessel and the loss of any associated catch (the Commonwealth SESS fishery is active in the Operational Area). In addition to the cost of repairing or replacing this equipment, it could also result in the loss of income from any fish that were previously caught during that fishing expedition. This risk is negated through:

- Maintaining the PSZ for the length of the activity;
- Communicating the location of the WSH-3 wellhead and the proposed wellhead removal activity with fisheries stakeholders; and
- Ensuring the WSH-3 wellhead is marked on navigation charts.

7.5.4 IMPACT ASSESSMENT

Table 7.10 presents the impact assessment for the displacement of or interference with third-party vessels.

Table 7-10 Impact assessment for the displacement of or interference with third-party vessels

Summary		
Summary of impacts	Damage to or loss of fishing equipment. Loss of commercial fish catches. Displacement of vessels.	
Extent of impact	Highly localised – immediately around vessels.	
Duration of impact	Short-term (minutes for a third-party vessel detour) to medium-term (replacement of damaged fishing equipment).	
Level of certainty of impacts	HIGH – The Bass Strait Area to be Avoided was established in acknowledgement of the risk posed by merchant vessels and petroleum infrastructure and smaller vessels.	
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.	
Environmental Controls and Performance Measurement		
EPO 5: Reduce impacts on other marine users through the provision of information to relevant stakeholders		
Control Measures	EPS	Measurement criteria
Prevent damage to vessels and commercial fishing equipment from the WSH-3 wellhead.	EPS-16: The WSH-3 PSZ remains gazetted until infrastructure is removed.	A copy of the WSH-3 PSZ is readily available.
	EPS-17: The location of the WSH-3 well is marked on navigation charts to assist other marine users in identifying the PSZ.	WSH-3 is marked on relevant Bass Strait navigational charts.
Seabed is left clear of infrastructure to meet requirements of OPGGS Act Section 572(3) and 270(3)	EPS-18: Oil and gas infrastructure is removed from the seabed above the mudline, leaving seabed clear.	Post removal survey confirms no oil and gas debris within 70m radius of wellhead
Recovery of all deployed equipment	EPS-19: All equipment deployed for the activity is returned to the vessel before departing the operational area.	Survey records show all deployed equipment is recovered
Communicate with marine users on activity	EPS-20: Consultation undertaken with relevant stakeholders, including Notice to Mariners issued via the AHO prior to activity commencement.	Stakeholder communication records Permits, Licences, Authorisations, Notifications and Consents (PLANC register) maintained to ensure notifications given
Vessel navigational and communication equipment installed, maintained and operated.	EPS-21: Navigation and communication equipment on vessels comply with Safety of Life at Sea (SOLAS) requirements	CMMS records show evidence of navigation and communication equipment maintenance
Impact consequence		

Negligible		
Demonstration of ALARP		
A 'negligible' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered and rejected are summarised below.		
Control considered	**Potential benefit**	**Reasoning for rejection**
Reduce or remove vessel use during key periods	If there are significant periods of fishing activity, the planned decommissioning activity could be undertaken outside this to prevent interference. The existing infrastructure remains a potential hazard all year round.	The planned activity is of short duration and is within a very small area of operations; the activity timing is also reliant on vessel availability and weather windows, making it difficult to plan around key periods. No significant issues have been raised through consultation regarding key periods of fishing activity.
Additional activity specific navigational or communications requirements	Notify all stakeholders of the commencement and cessation activities so they are aware of the exact dates.	As the PSZ is already gazetted and marked on charts, and the planned activity will occur wholly within the PSZ, no additional notifications are considered necessary, unless specifically requested through consultation. The navigational management and monitoring measures in place are industry standard and internationally accepted measures to minimise the potential for interference with, or collision between, vessels.
Additional support vessels on location to inform third party vessels in the vicinity of the activity	Another vessel could have the sole purpose of looking for other vessels in the vicinity to ensure communication with them and avoid negative interaction.	The additional cost of 24/7 vessel presence in field is considered grossly disproportionate to the benefit gained given the infrastructure and PSZ is marked on hydrographic charts. The radio room on the vessel is manned 24/7 allowing contact to be made with 3rd party vessels in the vicinity as required. If radio cannot raise the vessel, calls are made to the Home Affairs Office for their control.
Demonstration of Acceptability		
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).	
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.	

Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding displacement or interference. Some fishermen expressed interest in the infrastructure remaining in situ as fish attraction devices, but in order to meet the requirements of the OPGGS Act, the infrastructure will be removed.	
Legislative context	The EPS outlined in this EP align with the requirements of: • *OPGGS Act* 2006 *(Cth):* ○ Section 280(2) – requires that a person carrying on activities in an offshore area under the permit, lease licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others). ○ Part 6.6 (Safety zones and the area to be avoided). • *Navigation Act* 2012 *(Cth):* ○ Chapter 6 (Safety of navigation).	
Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity.	
Environmental context	*Marine reserve management plans*	Not triggered by this hazard.
	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	Not triggered by this hazard.
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are short- (minutes for a third-party vessel detour) to medium-term and highly localised (replacement of damaged fishing equipment). However, due to sophisticated navigation aids, the low level of fishing in the area, the Area to be avoided and the Petroleum Safety Zone the risks of an incident are low.

	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short- to medium-term and highly localised. There is no scientific uncertainty, as the activity is well understood, and good practice is well defined. The Bass Strait Area to be Avoided was established in acknowledgement of the risk posed by merchant vessels and petroleum infrastructure and smaller vessels. However, no incidents have been reported to this date, since the PSZ has been in effect since 2008.
	Principle C: 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 impacts from this activity are only short- to medium-term and highly localised, and there are no impacts to the health, diversity or productivity of the environment for future generations. Once the vessel leaves the field the risk of displacement of or interference with third-party vessels and activities will cease.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
None required.		
Record Keeping		
PSZ gazettal. Navigation charts. Incident reports.		

7.6 RISK: SEABED AND BENTHIC HABITAT DISTURBANCE

7.6.1 HAZARD

Removing the WSH-3 wellhead structure and the Wardie-1 conductor will result in seabed and benthic habitat disturbance. It is expected that one day will be required to remove the WSH-3 wellhead and one day for the Wardie-1 conductor and minimal time prior to and after removal for supporting ROV activities; up to 7 days has been allowed for to ensure contingency for weather and equipment delays.

The wellhead and associated trash cap protrude 2 m above the seabed and measures 0.8 m in diameter (see Figure 2-2). This directly displaces 0.45 m^2 of seabed habitat (unconsolidated sediments) typical of the eastern Bass Strait continental shelf. Wardie-1 conductor similarly displaces the same value of seabed habitat. Their removal will impact that displaced area and an area of approximately 5m radius around each well. Any removal of infrastructure can disturb benthic habitats and communities although the disturbance is localised and likely to recover over a short period. Dernie et al. (2003) showed that the full recovery of soft sediment assemblages from a lower physical disturbance occurred in 64 days, while higher intensity disturbance took up to 208 days.

Localised seabed disturbance will occur when cutting and removing the well infrastructure. Given cut is planned to be made from within the well below the mudline, disturbance is expected to be minimal. Cutting may result in localised sediment relocation and temporary increase in turbidity. There may be limited swarf (metal cuttings) that are released during cutting, however these are expected to remain within the well. The discharges associated with the AWJ process may also result in some smothering of the surrounding seabed where the swarf deposits. However, any impact will be highly localised around the wellhead and expected to recover within a period of days to weeks as evidenced by Dernie et al. (2003).

The use of the ROV during surveys and the cutting activity may result in highly localised temporary seabed disturbance and suspension of sediment causing increased turbidity as a result of working close to, or occasionally on, the seabed. ROV used close to or on the seabed is limited to that required for effective and safe subsea activities. Turbidity from the use of the ROV will occur in the vicinity of the wellhead and conductor whilst undertaking pre and post activity surveys and when checking for a cement patio. During removal, sediment will be dispersed through the use of the cutting tool.
Impacts to benthic habitats from the planned discharges describe above are restricted to within a few meters of the well locations.

7.6.2 KNOWN AND POTENTIAL ENVIRONMENTAL IMPACTS

The known and potential environmental impacts of seabed disturbance are:

- Highly localised loss of habitat;
- Temporary water quality turbidity
- Highly localised smothering of benthic habitats and infauna;
- Removal of created local hard substrate habitat; and
- Temporary void created in the seabed.

7.6.3 EVALUATION OF ENVIRONMENTAL IMPACTS

The combined area of seabed that is disturbed is minor (<5 m^2) compared with the overall extent of the sandy seabed habitat in the region and broader Bass Strait environment.

Mortality of benthic fauna in areas directly disturbed is considered to be very small compared with the overall extent of similar habitat in the region. Given the minor area of seabed affected, there are no long-term impacts on the diversity and abundance of benthic fauna or ecosystem functioning. The seabed at WSH-3 and Wardie-

1 is relatively flat and featureless on a sandy seabed with localised depressions in water depths of approximately 38 – 40 m (Fugro, 2007). At the time of the survey in 2007, there was no debris evident at the WSH-3 location, and no evidence of cuttings piles from the previous drilling activities. Therefore impact to the seabed is expected to be localised and will likely be impact to burrowing infauna and surface epifauna. Due to the small area of disturbance and temporary impact during survey and removal activities, the potential impact is assessed as negligible.

Elevated turbidity from the activity using ROV and cutting tools will result in suspension of sediment in the immediate vicinity, which may also contain drill cuttings discharged during the drilling activity. However, the potential for toxic impacts to the benthic environment is negligible, given that over 15 years has passed since the wells were drilled, and that water based muds were used. Suspension of sediments due to increased turbidity can result in the clogging of respiratory and feeding parts of filter feeding organisms. However, elevated turbidity would only be expected to be very localised and for a short duration (matter of hours) with no lasting effect and, therefore, will not have any significant impact to environment receptors.

The WSH-3 wellhead and Wardie-1 conductor can offer a long-term benefit of providing habitat for marine life and a localised increase in biodiversity. Studies have shown that the ecology of the Gulf of Mexico is enhanced by using abandoned oil and gas facility platform jackets as artificial reef (Fikes, 2013). In this case, the WSH-3 wellhead and Wardie-1 conductor provide hard substrate as habitat in an area otherwise dominated by sandy sediments. Barnacles, corals and other species that require hard substrates to attach to may have colonised the wellhead and conductor since they were installed 15 years ago. Their removal is not considered to have a long-term environmental affect given their presence on the structures is only as a result of the introduction of those structures and they are a very small piece of infrastructure in an otherwise empty expanse of seabed, therefore any community that has established itself there is small and isolated.

Removal of the structures will provide temporary loss of material from the sandy seabed, but this will be recovered in a relatively short time due to natural movement in the seafloor from localised currents.

Seabed and benthic habitat disturbance will not have a 'significant' impact to any MNES. There are no AMPs, KEFs or protected areas within the Operational Area. There are no BIAs for species that may be affected by seabed disturbance.

7.6.4 IMPACT ASSESSMENT

Table 7.11 presents the impact assessment for Seabed and benthic habitat disturbance.

Table 7-11 Impact assessment for Seabed and benthic habitat disturbance.

Summary	
Summary of impacts	Displacement of seabed sediments. Increased turbidity. Removal of hard substrate. Disturbance of benthic habitat.
Extent of impact	Highly localised – radius of impact <5m.
Duration of impact	Short-term (duration of activity).
Level of certainty of impacts	HIGH – the impacts of seabed displacement are well known.

Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.

Environmental Controls and Performance Measurement		
EPO 6: Seabed disturbance limited to planned activities within the operational area EPO 7: Removal of infrastructure meets the requirements of OPGGS Act Section 572(3) and 270(3) EPO 8: No substantial and unrecoverable changes to seabed which may adversely impact on benthic habitat		
Control Measures	EPS	Measurement criteria
Seabed is left clear of infrastructure to meet requirements of OPGGS Act Section 572(3) and 270(3)	EPS-18: Oil and gas infrastructure is removed from the seabed above the mudline, leaving seabed clear.	Post removal survey confirms no oil and gas debris within 70m radius of wellhead
Recovery of all deployed equipment	EPS-19: All equipment deployed for the activity is returned to the vessel before departing the operational area.	Survey records show all deployed equipment is recovered
Seabed disturbance limited to area required for removal	EPS-22: Removal activity limited to localised area around the wellheads.	Post removal survey Incident reports
Onshore disposal of subsea infrastructure at a licensed waste facility.	EPS-23: Recovered infrastructure (wellhead and conductor) are disposed or recycled using licensed contractors and waste facilities, in accordance with relevant legislation of the receiving jurisdiction	Transportation and disposal or recycling contractor records. Contractor waste management plan for disposal management
Impact consequence		
Negligible		
Demonstration of ALARP		
A ‘negligible’ residual impact consequence rating is considered to be ALARP and a ‘lower order’ impact. Additional controls considered are summarised below.		
Control considered	**Potential Benefit**	**Reasoning for rejection**

Monitoring and/or remediation to make good any damage to the seabed or subsoil in the area of the wellhead and conductor	Infill of any holes in seabed from removal of infrastructure and removal of any sediment which has drilling muds or chemicals contained within.	The seabed is sandy and featureless in the immediate vicinity of the infrastructure and does not support significant numbers of protected or other species. WBM was used to drill the wells, and there is no evidence of drill cuttings piles from survey footage (Figure 2.2),and therefore negligible effects at the seabed are expected from over 15 years ago and have likely been colonised since. Removal of sediment may remove fauna that can recolonise quickly within the immediate area from their natural area of occupancy. Therefore, there is no requirement for any activity to remediate the seabed following removal.

Demonstration of Acceptability	
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.
Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding Seabed and benthic habitat disturbance.

Legislative context	The performance standards outlined in this EP align with the requirements of the: • *OPGGS Act* 2006 (Cth): ○ Section 280(2) – a person carrying on activities in an offshore area under the permit must carry on those activities in a manner that does not interfere with…the conservation of the resources of the sea and seabed…..to a greater extent than is necessary for the reasonable exercise of the rights and performance of the duties of the first person. ○ Section 270(3) - The Joint Authority may consent to the surrender sought by the application only if the registered holder of the permit, lease or licence: c) has: (i) to the satisfaction of NOPSEMA, removed or caused to be removed from the surrender area (defined by subsection (7)) all property brought into the surrender area by any person engaged or concerned in the operations authorised by the permit, lease or licence ○ Section 270 (3) (e) has provided, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the surrender area; ○ Section 270 (3) (f) - has, to the satisfaction of NOPSEMA, made good any damage to the seabed or subsoil in the surrender area caused by any person engaged or concerned in the operations authorised by the permit, lease or licence;	
Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity.	
Environmental context	*Marine reserve management plans*	Not triggered by this hazard.
	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	Not triggered by this hazard.
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are only short-term (less than 7 days) and highly localised (5m radius around each well). It is expected that 2 days will be necessary to remove the structures and the seabed to fully recover within ~8 weeks.

	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short-term and highly localised (5m radius around each well). There is no scientific uncertainty, as the impacts of seabed displacement are well known, and good practice is well defined and it aligns with the requirements of the *OPGGS Act* 2006 (Cth).
	Principle C: 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 impacts from this activity are only short-term (less than 7 days) and highly localised (area of approximately 5m radius around each well), and there are no impacts to the health, diversity or productivity of the environment for future generations as the seabed will infill and make a full recovery within ~8 weeks of the infrastructure removal.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
None required.		
Record Keeping		
Post-removal ROV survey report.		

8 UNPLANNED EVENTS RISK AND IMPACT ASSESSMENT

A summary of the unplanned impact and risk assessment completed during an ENVID on 14th June 2024 is summarised in Table 8-1. A summary of spill response activities and an impact assessment is also included in this section.

Table 8-1: Summary of environmental consequence of unplanned events

UNPLANNED Aspect	Consequence	Likelihood	Inherent Ranking
Marine pest introduction	Moderate	Highly unlikely	Medium
Unplanned Interaction with Fauna	Negligible	Highly unlikely	Low
Non-hazardous and Hazardous Solid Waste	Negligible	Possible	Low
	Minor	Highly unlikely	Low
Unplanned release of diesel, hydraulic fluid etc	Minor	Unlikely	Medium

8.1 RISK: INVASIVE MARINE SPECIES

8.1.1 HAZARD

Invasive Marine Species (IMS) are marine plants, animals, or algae that have been introduced into a region that is beyond their natural range but that have the ability to survive and possibly thrive.

Vessel Operations

During decommissioning activities, vessels will be transiting to and from the Operational Area, which may include traffic mobilising from beyond Australian waters (though this is considered low likelihood).

All vessels are subject to some level of marine fouling. Organisms attach to the vessel hull, particularly in areas where organisms can find a good attachment surface (e.g. seams, strainers and unpainted surfaces) or where turbulence is lowest (e.g. niches and sea chests). Commercial vessels typically maintain anti-fouling coatings to reduce the build-up of fouling organisms.

Organisms can also be drawn into ballast tanks during onboarding of ballast water as cargo is loaded or to balance vessels under load.

Submersible equipment

The decommissioning equipment such as the ROV and water jetting tool will also be transported to and used within the Operational Area. There is the potential for the equipment to be used on other projects before being used on this activity, as a consequence there is the potential for IMS translocation.

8.1.2 KNOWN AND POTENTIAL IMPACTS

Localised impact on marine fauna and flora including:

- Competition, predation or displacement of native species,
- Alteration of natural ecological processes,
- Habitat modification e.g. through increased burrowing in soft sediment, or establishment of filter feeders on hard substrate;
- Introduction of pathogens with the potential to impact human and/or ecological health, and
- Reduction and/or competition with commercial fish and aquaculture species.

There are four key steps involved for a successful IMS incursion:

- Colonisation and establishment of the marine pest on a vector (e.g. vessel) in a donor region (e.g. home port)
- Survival of the organism on the vector during the voyage from the donor to the recipient region
- Transfer from the vector to habitat in the recipient region
- Colonisation (e.g. reproduction or dislodgement) of the recipient region by the marine pest, followed by successful establishment of a viable new population.

Colonisation requires there to be suitable environmental conditions for the particular species, which includes water depth, salinity, habitat type, water temperature and food availability. Marine pest species also tend to be coastal species, and as such, most exotic marine pests introduced to Australian waters have distributions restricted to shallower coastal habitats. Those that may be present within adjacent coastal waters are listed in Table 5-9, with their relevant habitat types.

Sheltered ports and shallow coastal areas have historically been colonised by IMS due to the habitat type and frequency of vessel movements. Consequently, they are often the source of IMS.

To act as a harbour for introduced marine species, a number of links in a sequential chain of successive processes would need to be properly aligned, with these summarised as follows:

- An exotic species would need to be successfully conveyed to the operational area, such as via vessel biofouling
- The exotic species would need to successfully transfer from its arrival vector to the field substrate within the operational area
- The habitat conditions presented by substrate would need to be conducive to the enduring survival of that species given the planned removal of the wellhead will result in there being no infrastructure for the species to establish on following vessel departure.

Not all exotic marine species present as 'invasive' or 'pest' species. To be considered as 'invasive', the introduced species must be able to survive and establish in the new location, and subsequently manifest as some form of nuisance or pest (NOPSEMA 2018). Furthermore, even if an exotic species had established on the seabed, it would only then represent any tangible threat to Australian waters in the event that it was able to further its range, either through natural processes such as larval dispersion, or by transfer to another vector, such as by subsequent biofouling of a vessel staying in the vicinity. Without this secondary transfer mechanism any exotic species colony which may be established would represent an isolated community of no wider significance or ecological consequence. Given there is no requirement for any vessels to visit the activity location following infrastructure removal, transfer via another vessel is not very likely.

It is recognised artificial, disturbed and polluted habitats in tropical regions are susceptible to introductions, which is why ports are often areas of higher IMS risk (Neil et al., 2005). However, in Australia there are limited records of detrimental impact from IMS compared with other tropical regions (such as the Caribbean).

Following their establishment, eradication of marine pest populations is often impossible, limiting management options to ongoing control or impact minimisation. However, this depends on the environmental conditions and species. For this reason, increased management requirements have been implemented by Commonwealth and State agencies via the development of Australia's National System for the Prevention and Management of Marine Pest Incursions which looks at managing biofouling and ballast water. Once established, invasive species have the potential to out-compete indigenous species and affect overall native ecosystem function and modify habitats for example through bioturbation. The above impacts can result in a flow- on detrimental effects to marine parks, tourism and recreation.

Ballast water

The Department of Agriculture Water and Environment (DAWE) is the lead agency for management of ballast water from vessels operating in Australian waters. DAWE introduced the Australian Ballast Water Management Requirements Version 8 (DAWE 2020) that are enforced under the Biosecurity Act 2015. The requirements provide guidance for vessel operators on best practice policies and apply to all vessels operating internationally and domestically in Australia.

Key points for vessels intending to discharge ballast within Australian waters, as detailed within the Australian Ballast Water Management Requirements Version 8 include:

- All vessels must carry a valid ballast water management plan
- All vessels must carry a valid International Ballast Water Management certificate
- Vessels with a ballast water management system (BWMS) must carry a Type Approval Certificate specific to the type of BWMS installed
- All vessels must maintain a complete and accurate record of all ballast water movements.

Biofouling

The central Commonwealth instrument for the control of biofouling related IMS risks is the Biosecurity Act 2015. The Biosecurity Amendment (Biofouling Management) Regulations 2021 (biofouling regulations) entered into force on 15 June 2022. This introduced requirements for operators of all vessels to provide information on biofouling management practices prior to arriving in Australia.

Australian biofouling management requirements Version 2 (DAFF, 2023) provide details of Australia's pre-arrival reporting requirements and guidance for operators of international vessels that are subject to biosecurity control while in Australian territorial seas. The requirements set out vessel operator obligations for the management of biofouling when operating vessels under biosecurity control within Australian territorial seas to comply with the Biosecurity Act 2015.

The potential biofouling risk presented by vessels within the Operational Area relates to the length of time vessels are in Australian waters or operating outside Australian waters, the length of time spent at these location(s) and whether the vessels have undergone hull inspections and cleaning and the age of the antifouling coating, prior to entering Australian waters.

Any inherent risk of transfer from a vessel of invasive mobile and swimming species can be minimised by managing vessel hulls to have only minimal fouling, thus denying mobile species suitable habitat for their own colonisation and sustainment.

8.1.3 EVALUATION OF ENVIRONMENTAL RISKS

There is a potential risk that invasive marine pests entering the Operational Area will establish on the natural benthic habitat (soft sediments at the seabed). Ninety Mile Beach Marine Park is located within the EMBA and contains habitat that may be favourable to some marine pest species. The *Ninety Mile Beach Marine National Park Management Plan* (ParksVic 2006) lists *Marine and other pests* as a threat and lists prevention as the most effective management option.

In Victoria, Port Phillip Bay is a hotspot for the introduction of marine animals and plants due to its long history of international shipping providing a means for pest to arrive. There are at least 100 confirmed records of introduced and 61 cryptogenic marine pests found in the bay (DEECA 2024). There is potential for vessels sourced for the proposed activity to enter and come from Port Phillip Bay and therefor pose a risk of transporting known marine pests into the Operational Area.

According to Parks Victoria (n.d), there are 6 marine pest species of concern in Victoria (Table 5-9) and their likelihood of establishment in the operational area is described in Table 8-2. However, management controls established in Table 8-3 will reduce the likelihood of this occurring.

Table 8-2 Marine Pest species of concern in Victoria and likelihood of establishment in Operational Area

Species		Likelihood of Establishment in Operational Area
Common Name	**Scientific Name**	
Northern Pacific Seastar	*Asterias amurensis*	Known to be a pest within shallow Victorian waters, however there is a low likelihood of establishment during the activity due to the water depth being greater than the tolerance limit in Australian waters (<25m, NIMPIS 2022a). In Japan (where species is from) it can be found up to 200m deep. But in Australia, is not found beyond 25m deep. (NIMPIS 2022a) this species is able to tolerate the water temperature at the operational area (12-16°C, NOAA, 2023).
Wakame	*Undaria pinnatifida*	Known to be a pest within shallow Victorian waters, however there is a low likelihood of establishment during the activity due to the water depth being greater than the tolerance limit (<25m, NIMPIS 2022b). This species is able to tolerate the water temperature at the operational area (12-16°C, NOAA, 2023).
Pacific Oyster	*Crassostrea gigas*	Known to be a pest within shallow Victorian waters, however there is a low likelihood of establishment during the activity due to the water depth being greater than the tolerance limit (<3m, NIMPIS 2022c). This species is able to tolerate the water temperature at the operational area (12-16°C, NOAA, 2023).
Green Shore Crab/European Shore Crab	*Carcinus maenus*	There is the potential for this species to establish within the operational area due to the temperature (3-26°C, NIMPIS 2022d) and water depth (<60m, NIMPIS 2022d) being within the tolerance range of this species. However, management controls established in Table 8.2 will reduce the likelihood of this occurring.
European Fan Worm	*Sabella spallanzanii*	Known to be a pest within shallow Victorian waters, however there is a low likelihood of establishment during the activity due to the water depth being greater than the tolerance limit (<30m, NIMPIS 2022e). This species is able to tolerate the water temperature at the operational area (12-16°C, NOAA, 2023).
New Zealand Screw Shell	*Maoricolpus roseus*	There is the potential for this species to establish within the operational area due to the temperature (3-26°C, NIMPIS 2022f) and water depth (<200m, NIMPIS 2022f) being within the tolerance range of this species. However, management controls established in Table 8.2 will reduce the likelihood of this occurring.

Both the green shore crab (*Carcinus maenus)* and New Zealand screw shell (*Maoricolpus roseus)* are able to survive in the habitat (soft sediment), depth (39.5m), and temperature (12-16°C) of the Operational Area. Management controls established in Table 8.2 will reduce the likelihood of these species establishing within the Operational Area or EMBA which effectively prevent the transfer of these species to the Operational Area.

The mobilisation of support vessels personnel and equipment to undertake offshore petroleum activities is industry standard practice, and the invasive species risks are well understood and subject to regulation. The vessels and equipment that are mobilised for the activity will meet Australian biosecurity requirements as per the *Marine Biosecurity Act 2015*, and proposed management is consistent with Australian biofouling management requirements Version 2 (DAFF 2023) and Australian Ballast Water Management Requirements Version 8 (DAWE 2020).

Pursuant to the Biosecurity Act 2015 and Australian Ballast Water Management Requirements 2020, vessels carrying ballast water and engaged in international voyages shall manage ballast water so that marine pest species are not introduced.

Application of the proposed control measures and adherence to legislation and regulations reduce the likelihood of introducing invasive species into the operational area and surrounding islands, and the dispersive offshore location in the operational area reduces the probability of successful establishment in the unlikely event of introduction.

No threatened ecological communities, KEFs or protected areas are present in the operational area that could be affected. There are protected areas (including Ninety Mile Beach National Park) within the EMBA, however that could be affected. All vessels will comply to the Biosecurity Act 2015 and therefore the overall consequence level was assessed as Moderate.

The pathways for IMS introduction are well known; consequently, standard preventive measures are proposed. The ability for invasive marine species to colonise a habitat depends on a number of environmental conditions. It has been found that highly disturbed environments (such as marinas) are more susceptible to colonisation than are open water environments where the number of dilutions and the degree of dispersal are high (Paulay et al., 2002) and therefore the likelihood is considered highly unlikely.

8.1.4 IMPACT ASSESSMENT

Table 8.3 presents the impact assessment for the risk of IMS introduction during decommissioning activities.

Table 8-3 Impact assessment for Introduced Marine Species from decommissioning activities

Summary	
Summary of impacts	Potential for vessels and immersible equipment to transfer IMS from international or Australian waters into the Operational area through ballast water or from vessel hulls.
Extent of impact	Localised – immediately around vessel and Operational Area.
Duration of impact	Short-term for the duration of onsite activity; long term if established.
Level of certainty of impacts	HIGH – The vessel and decommissioning activities will generate the risk of IMS during operations and entering or exiting the area.
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.

Environmental Controls and Performance Measurement		
EPO 9: No introduction of invasive marine species		
Control Measures	EPS	Measurement criteria
Legislative requirements are adhered to for biofouling and ballast.	EPS-30: All vessels demonstrate compliance with the *Biosecurity Act 2015*	Documented evidence of compliance

Impact consequence (residual)		
Consequence	Likelihood	Risk rating
Moderate	Highly unlikely	Low

Demonstration of ALARP		
A 'low' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered and rejected are summarised below.		
Control considered	**Potential benefit**	**Reasoning for rejection**
Support vessels to be sourced from Australian waters only	Reduce potential for IMS to be transported into area since vessels would not have originated elsewhere	Vessels and equipment suitable for the activity that have only operated in local, State or Commonwealth waters may not be available; therefore, work could not be completed. Delays to activities caused by delays to contracting vessel(s). Minimal benefit expected given the implemented controls ensure only low IMS risk vessel are contracted.
Use an alternative ballast system to avoid uptake or discharge of water (zero discharge)	Reduces likelihood of IMS being introduced to marine environment via ballast water.	Vessels suitable for the activity may not have options for alternative ballast system, therefore would require modification at significant cost, ballast water exchange is required for stability on the vessels.

Application of new anti-foulant coating to vessels prior to contract commencement	Reduces likelihood of IMS on vessel hull.	Substantial additional cost, potential delay to commencement of activity. Little benefit given recent anti-fouling treatment history for vessels and requirement to complete IMS Risk assessment in accordance with legislation. Anti-fouling coating on the in-water surfaces of vessels, and the chemical dosing of sea chests (marine growth prevention system, if present) will occur. Anti-fouling coatings containing tributyltin (TBT) are not an option as these anti-foulants are prohibited for use in Australia.

Demonstration of Acceptability		
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).	
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.	
Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding introduced marine species.	
Legislative context	The EPS outlined in this EP align with the requirements of the IMO 2023 Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines 2023), Australian biofouling management requirements Version 2 (DAFF, 2023), Australian Ballast Water Management Requirements Version 8 (DAWE 2020), Biosecurity Amendment (Biofouling Management Regulations 2021) and the Biosecurity Act 2015.	
Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity. Application of guidelines detailed in the National Biofouling Management Guidance for the Petroleum Production and Exploration Industry, and in the IMO Guidelines for the Control and Management of Ships' Biofouling to Minimise the Transfer of Invasive Aquatic Species. Consideration of the Victorian Government *Invasive Plants and Animals Policy Framework* for the management of existing and potential invasive species, *Module 2: Invasive Marine Pests* (Agriculture Victoria, 2023).	
Environmental context	It is unlikely that any IMS entering the Operational Area will establish on the natural benthic habitat (soft sediments at the seabed). The depth of the Operational Area open ocean conditions and lack of available light at this depth provides a very different environment to that within sheltered port and shallow coastal areas which have historically been colonised by IMS. It is recognised that some of the known pest species in the Ports of Victoria could establish in the operational area due to the environmental conditions, but that it is considered highly unlikely.	
	Marine reserve management plans	Not triggered by this hazard.

	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	Wildlife Conservation Plan for Seabirds (DAWE 2020) identifies invasive species as a potential threat	
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).		
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.		The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are localised (immediately around vessel and Operational Area) and short-term (less than 7 days). The impacts of IMS can be long-term if they become established; however, it is unlikely that any IMS entering the Operational Area will establish on the natural benthic habitat. The depth of the Operational Area, open ocean conditions and lack of available light at this depth provides a very different environment to that within sheltered port and shallow coastal areas which have historically been colonised by IMS, the removal of the infrastructure provides limited surfaces to adhere to and the likelihood of establishment and subsequent translocation is highly unlikely due to the duration of the activity and lack of activity at the location following vessel departure..

	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are localised (immediately around vessel and Operational Area) and typically short-term (less than 7 days). The impacts of IMS can be long-term if they become established; however, it is unlikely that any IMS entering the Operational Area will establish on the natural benthic habitat. The activity is well understood, and good practice is well defined. All practicable measures are taken to ensure the risk is reduced to ALARP and the impact assessment includes consideration of Conservation Plan for Seabirds that identifies invasive species as a potential threat.
	Principle C: 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 impacts from this activity are localised (immediately around vessel and Operational Area) and typically short-term (less than 7 days). The impacts of IMS can be long-term if they become established; however, it is unlikely that any IMS entering the Operational Area will establish on the natural benthic habitat. The activity is well understood, and good practice is well defined. All practicable measures are taken to ensure that any risk to the health, diversity or productivity of the environment for future generations is reduced to ALARP as once the activities are completed the IMS risk will cease.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level. All vessels are required to demonstrate compliance with the Biosecurity Act 2015 with documented evidence.
Environmental Monitoring		
None required.		
Record Keeping		

Vessel logs. Audit logs. Incident reports.

8.2 RISK: INTERACTION WITH MARINE FAUNA

8.2.1 HAZARD

There is the potential for vessels or equipment (e.g., ROV) involved in both planned and unplanned decommissioning activities to interact with marine fauna, including potential strike or collision potentially resulting in severe injury or mortality.

8.2.2 KNOWN AND POTENTIAL IMPACTS

Movement of vessels in the operational area introduces the potential for interaction with marine fauna present at the same location during the activity. Marine fauna in surface waters that would be most at risk from vessel collision include marine mammals, marine reptiles and sharks. A summary of the marine fauna and BIAs which intersect with the operational area is in Section 5.5. There is the potential for death or injury of EPBC Act listed individual species; however, as they would represent an individual within the local population, it is not expected that it would result in a decreased population size over what would usually occur due to natural variation, at a local or regional scale, it is expected that the loss of an individual would be a negligible consequence.

Marine Mammals
The likelihood of vessel/marine fauna collision being lethal is influenced by vessel speed; the greater the speed at impact, the greater the risk of mortality (Jensen and Silber, 2003; Laist et al., 2001). Vanderlaan and Taggart (2007) found that the chance of lethally injuring a large whale due to a vessel strike increases from about 20% at 8.6 knots to 80% at 15 knots. The worst potential impact from vessel collision or entanglement would be mortality or serious injury of an individual. Collisions between vessels and cetaceans are most frequent on continental shelf areas where high vessel traffic and cetacean habitat occur simultaneously (WDCS, 2006).

The reaction of whales to the approach of a vessel is quite variable. Some species remain motionless when in the vicinity of a ship, while others are known to be curious and often approach vessels that have stopped or are slow moving, although they generally do not approach, and sometimes avoid, faster-moving vessels (Richardson et al., 1995). A foraging BIA for pygmy blue whale and a migration BIA for the southern right whales are present in the operational area, while there is a reproduction BIA for Indo-Pacific bottlenose dolphins and southern right whale that overlaps the EMBA, resulting in some increased seasonality presence of these species. However, interaction with marine mammals is expected to be minimal given the short duration of the activity.

Sharks and fish
The great white shark reproduction BIA overlaps the operational area, and therefore seasonal presence may increase potential interaction with this species**.** Sharks, other pelagic fish and demersal fish are likely to exhibit a short-term avoidance to vessels, or ROVs. This is likely to be initiated through the vibrations and underwater noise emitted from these activities rather than the physical presence. Such avoidance is likely to be temporary and not expected to result in adverse impacts at an ecosystem or population level.

Turtles
Turtle/vessel interactions arising from increased vessel traffic is recognised as one of a number of key threats to marine turtles in the Recovery Plan for Marine Turtles (DoEE, 2017). However, the operational area does not overlap any BIAs, and therefore individuals may be encountered transiting through the area. Turtles will typically avoid vessels by rapidly diving. However, their ability to respond varies greatly depending on the speed of the vessel. Hazel (2009) reported that the number of turtles that fled vessels decreased significantly as vessel speed increased. Turtles are also adapted to detect sound in water (Popper et al., 2014) and will generally move from anthropogenic noise-generating sources, including vessels, within their detection range.

Birds

A number of protected species of marine birds have potential habitats or migratory routes in and around the operational area. And 7 BIAs for foraging overlap the operational area. No helicopter flights are planned and therefore behavioural impacts are limited to the presence of vessels (refer Section 7.4) resulting in attraction.

8.2.3 EVALUATION OF ENVIRONMENTAL RISKS

The factors that contribute to the frequency and severity of impacts due to collisions vary greatly due to vessel type, vessel operation (specific activity, speed), physical environment (e.g. water depth), the type of animal potentially present and their behaviours. Project vessels are likely to be travelling less than 6 knots in the Operational Area; therefore, the chance of a vessel colliding with protected species and resulting in a lethal outcome is reduced. The worst potential impact from vessel collision or entanglement would be mortality or serious injury of an individual.

8.2.4 IMPACT ASSESSMENT

Table 8.4 presents the impact assessment for the displacement of or interference with third-party vessels.

Table 8-4 Impact assessment for Interaction with Marine Fauna

Summary		
Summary of impacts	Potential for collision with marine fauna during vessel-based activities.	
Extent of impact	Highly localised – immediately around vessel.	
Duration of impact	Short-term for the duration of the activity	
Level of certainty of impacts	HIGH – The potential for interaction is well understood given the BIA and fauna presence known to occur in the Operational Area.	
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.	
Environmental Controls and Performance Measurement		
EPO 10: No injury or mortality to EPBC Act 1999 listed fauna during activities		
Control Measures	EPS	Measurement criteria
Support vessels will comply with EPBC Regulations 2000 (Part 8)	EPS-04: Support Vessel Masters will comply with relevant parts of EPBC Regulation (2000): Reg. 8.05 & 8.06 respectively, where safe to do so: • Within the caution zone for a cetacean (including a calf) (within 300 m of a cetacean), the Vessel Master must operate the vessel at a constant speed of less than 6 knots and minimise noise; and • If a calf appears within an area that means the vessel is then within the caution zone of the calf, the Vessel Master must immediately stop the vessel and turn off the vessel's engines or disengage the gears or withdraw the vessel from the caution zone at a constant speed of less than 6 knots.	Vessel Masters provided the induction with speed restriction <6 knots within the operational area. Incident reports record non-compliances with EPBC Regulations 2000 - Part 8 Division 8.1 (interacting with cetaceans)

Environmental Induction	EPS-05: Vessel crew has completed an EP-specific environmental induction covering the requirements for cetacean/vessel interaction distances consistent with EPBC Regulations 2000 (Part 8) and are familiar with the requirements	Induction records verify that vessel crews have completed an environmental induction.
Marine fauna collisions reported to National Ship Strike Database	EPS-31: Any vessel collision with marine fauna in the operational area is submitted to the National Ship Strike Database at: https://data.marinemammals.gov.au/report/shipstrike Death or injury to EPBC Act listed marine fauna from vessel collision are recorded/reported to NOPSEMA and DCCEEW in line with regulations. This is also Action Area A6in the National Recovery Plan for Southern Right Whale – Action 5: Ensure all vessel strike incidents are reported in the National Ship Strike Database managed through the Australian Marine Mammal Centre, Australian Antarctic Division.	Vessel collision incident report Database entry number

Impact consequence (residual)		
Consequence	Likelihood	Risk rating
Negligible	Highly unlikely	Low

Demonstration of ALARP

A 'low' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered and rejected are summarised below.

Control considered	**Potential benefit**	**Reasoning for rejection**
Removal of vessels	Removes the risk of interaction with marine fauna completely	Vessel presence is required during the activity and there are no practicable alternatives. The potential for interaction between support vessels and fauna cannot be eliminated, however the risk is low given the low volume of vessel activity, short duration and speed limits.

Reduce or remove vessel use during key sensitive periods	Reduce risk of collisions (causing harm) during environmentally sensitive periods for listed marine fauna.	Reducing or removing vessel activities during known migration periods of marine fauna is not a viable option as these activities are necessary for the safe and efficient operation. Given the short duration of the activity and low vessel speeds, the risk to marine fauna is considered very low and no additional controls are required.
Use of marine fauna observers on all vessels to identify fauna close to vessels	Improves ability to spot and identify marine fauna at risk of collision (that may cause harm).	Vessel Masters will complete an environmental induction which includes the applicable requirements or speed limits and avoiding fauna. The introduction of a specialist marine fauna observer is unlikely to increase detection and the additional cost is considered grossly disproportionate given the low vessel speeds and low potential for impacts on marine fauna.

Demonstration of Acceptability		
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).	
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.	
Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding unplanned interaction with marine fauna.	
Legislative context	Management consistent with Part 8 of the EPBC Regulations. Control measures implemented will minimise the potential risks and impacts from vessel strike from the activity to relevant species identified in recovery plans and conservation advice	
Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity.	
Environmental context	*Marine reserve management plans*	Not triggered by this hazard.

	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	Boat strike and vessel disturbance are identified as potential threats to a number of marine fauna species in relevant recovery plans and conservation advice. The above information demonstrates that, with control measures in place, the activity will be conducted in a manner that reduces potential impacts to ALARP and an acceptable level and is not inconsistent with the conservation management plans and recovery plans in place.
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are short-term (less than 7 days), highly localised and the risk is managed to ALARP. As the project vessels are likely to be travelling less than 6 knots in the Operational Area the chances of lethal injury to marine fauna due to collision are low.
	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short-term (less than 7 days), highly localised and the risk is managed to ALARP. There is no scientific uncertainty, as the activity is well understood, and good practice is well defined. Support vessels will comply with EPBC Regulations 2000 where the vessel must be operated at a constant speed of less than 6 knots when within a caution zone for a cetacean
	Principle C: 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 impacts from this activity are short-term (less than 7 days) and highly localised, and there are no impacts to the health, diversity or productivity of the environment for future generations and once the activity is completed the vessel will leave the field and the risk will cease.

	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
None required.		
Record Keeping		
Environmental induction records. Incident reports.		

8.3 RISK: UNPLANNED DROPPED OBJECTS

8.3.1 HAZARD

Solid objects such as those listed below can be accidentally released to the marine environment during the activity from the vessel used for decommissioning:

- Non-hazardous solid wastes, e.g., paper, plastics and packaging;
- Hazardous solid wastes, e.g., batteries, fluorescent tubes, medical wastes, and aerosol cans; and
- Equipment and materials, e.g., hard hats, tools or infrastructure parts.

Release of these waste streams may occur as a result of overfull and/or uncovered bins, incorrectly disposed items or spills during transfers of waste. The event will only occur within the operational area, and all non-buoyant waste material or dropped objects are expected to remain within the operational area. Buoyant objects could potentially move beyond the operational area.

8.3.2 KNOWN AND POTENTIAL ENVIRONMENTAL IMPACTS

Solid waste items have the potential to pollute marine habitats and injure or kill fauna through ingestion or exposure. Marine fauna entanglement risk in waste plastics, which can also be ingested when mistaken as prey. Seabed disturbance can also occur due to non-buoyant dropped objects.

8.3.3 EVALUATION OF ENVIRONMENTAL IMPACTS

Objects accidentally dropped to the seabed could occur during the activity, such as the transfer and lifting of objects and equipment. Equipment and other items lost at sea could be caused by crane failure, adverse weather, human error, rigging failure and vessel motions and potentially could lead to loss of or changes to benthic habitats. The area of potential disturbance from a non-buoyant dropped object would be restricted to the area in which it was dropped. In the unlikely event that seabed equipment being recovered is dropped to the seabed, disturbance to benthic habitat would occur, the area of which will be confined to the footprint of the equipment.

The seabed within the operational area is a primarily sandy sediments with little epifauna, if an object (e.g. equipment, wellhead or conductor during removal) is dropped during the activity, the sediment and benthic habits will not be destroyed, disturbance of the communities on and within them (i.e., the epifauna and infauna) will occur in the event of a dropped object; and depressions may remain on the seabed for some time after removal of the dropped object as they gradually infill over time. Impacts to benthic communities from dropped object disturbance are expected to be short term in duration due to the ability for such communities to recover. Recovery is expected within six to 12 months, based on previous surveys (URS, 2010).

Small buoyant dropped objects have the potential to be transported by marine currents and may impact on reefs, islands, shoals and banks within the region. Accidentally dropped objects, such as plastics, have the potential to smother benthic environments, and the release of hazardous solids (e.g., wastes such as batteries) could also impact water quality through pollution of the immediate receiving environment.

Solids such as plastics have the potential to affect benthic environments and to harm marine fauna through entanglement or ingestion. Species at the sea surface such as foraging birds, turtles and pelagic fish species are more at risk from entanglement. Once ingested, plastics can damage internal tissues and inhibit physiological processes, which can both potentially result in fatality (Derraik, 2002). Marine turtles may mistake plastics for food; once ingested, plastics can damage internal tissues and inhibit physiological processes, which can both potentially result in fauna fatality. Floating, non-biodegradable marine debris has been highlighted as a threat to marine turtles, whales, albatrosses and giant petrels in the relevant recovery plans and approved conservation advice. The recovery plans and approved conservation advice, as well as the Threat Abatement Plan for the

Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans (DoEE, 2018), have specified a number of recovery actions to help combat this threat. Of relevance to this event is the legislation for the prevention of garbage disposal from vessels. As the vessel will be on location for a short duration, it is unlikely there will be a requirement to offload any wastes, they will be contained for disposal onshore.

Release of hazardous solids (e.g., wastes such as batteries) may result in the pollution of the immediate receiving environment, leading to detrimental health impacts to marine flora and fauna. Physiological damage can occur through ingestion; or absorption may occur in individual fish and sharks, marine mammals, marine reptiles or seabirds. Habitat modification will not result in any significant effects to populations of threatened or migratory fauna.

8.3.4 IMPACT ASSESSMENT

Table 8.5 presents the impact assessment for unplanned release of non-hazardous solid objects.

Table 8-5Impact assessment for Unplanned Release of Dropped Objects.

Summary		
Summary of impacts	Disturbance of benthic habitat. Entanglement or ingestion by marine fauna.	
Extent of impact	Highly localised – radius of impact <5m. Buoyant objects could potentially move beyond the operational area.	
Duration of impact	Short-term (duration of activity – less than 7 days).	
Level of certainty of impacts	HIGH – the impacts of unplanned loss of solid waste are well known.	
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.	
Environmental Controls and Performance Measurement		
EPO 11: No unplanned objects, emissions or discharges to sea or air		
Control measures	EPS	Measurement criteria
Waste generated during operations will be managed in accordance with the vessel waste Management Plan	EPS-14: Solid waste materials are stored in fit for purpose storage containers and/or lifting skips, labelled and equipped with lids / covers to prevent loss of material during storage and handling.	Garbage Record Book shall be maintained on all facilities in accordance with MARPOL 73/78 Annex V Regulation 9
	EPS-15: Hazardous solid wastes will be managed in accordance with relevant legislation including MARPOL 73/78 Annex III	A waste register will be maintained to show that hazardous wastes are being collected and returned onshore for disposal
Environmental Induction	EPS-32: Support vessel masters complete an induction containing basic information on environmental practices	Induction completion record

PMS on crane and lifting equipment to ensure fit for purpose	EPS-33: Lifting equipment is certified, inspected and maintained	PMS for crane and lifting equipment
Lift plans in place for the specific activity	EPS-34: Lifting plans are prepared and then ratified by client to ensure crane is fit for purpose and adequate for lifting (ROV and tool, and wellhead recovery)	Lift plan
Competent crew undertake lifts under a permit to work system	EPS-35: All lifts performed by competent crew	Training records Permit to work
Recovery of dropped objects	EPS-36: Objects dropped overboard are recovered (if possible) to mitigate the environmental consequences from objects remaining in the marine environment	Incident records detail fate of dropped objects

Impact consequence (residual)			
	Consequence	Likelihood	Risk rating
Small objects (e.g. windblown waste)	Negligible	Possible	Low
Larger non buoyant objects (e.g. cutting tool)	Minor	Highly Unlikely	Low

Demonstration of ALARP

A 'negligible' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered are summarised below.

Control considered	Potential benefit	Reasoning for rejection
Eliminate any lifting in the operational area	Eliminates the risk of releasing solid objects to the marine environment due to dropped object.	Not feasible to eliminate lifting in the field as the cutting tool must be deployed from a vessel, and the conductor and wellhead retrieved to the vessel.
Only undertake lifting during daylight hours	Reduces risk of not seeing dropped objects	Reducing the lifting window would have consequences on the schedule time and cost as the activity length could potentially double in time.

Demonstration of Acceptability

Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.
Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding unplanned release of dropped objects.

Legislative context	The performance standards outlined in this EP align with the requirements of the: • *OPGGS Act* 2006 (Cth): ○ Section 280(2) – a person carrying on activities in an offshore area under the permit must carry on those activities in a manner that does not interfere with…the conservation of the resources of the sea and seabed…..to a greater extent than is necessary for the reasonable exercise of the rights and performance of the duties of the first person. • Management consistent with MARPOL ○ Annex V (garbage discharges) ○ Annex III (Regulations for the prevention of pollution by harmful substances carried by sea)	
Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity.	
Environmental context	*Marine reserve management plans*	Not triggered by this hazard.
	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	Control measures implemented will minimise the potential impacts from the activity to species identified in recovery plans and approved conservation advice as well as the Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans (DoEE, 2018) as having the potential to be impacted by surface releases of solid objects. Marine debris is also identified as a potential threat in Recovery Plan for Marine Turtles in Australia and Recovery Plan for the white shark (*Carcharodon carcharias*).
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are only short-term (less than 7 days) and highly localised having a radius of impact <5m, although buoyant objects could potentially move beyond the operational area. However, the residual impact consequences are considered negligible and a 'lower order' impact.

	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short-term (less than 7 days) and highly localised. There is no scientific uncertainty, as the activity is well understood, and good practice is well defined and the impact assessment includes considerations of the Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans. The consideration and adoption of the controls outlined demonstrates that best practice is being implemented for this activity.
	Principle C: 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 impacts from this activity are only short-term (less than 7 days) and highly localised, and there are no impacts to the health, diversity or productivity of the environment for future generations as once the activity is completed this risk will cease after the vessel leaves the field.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
None required.		
Record Keeping		
Post-removal ROV images. Dropped object incident reports		

8.4 RISK: UNPLANNED RELEASE OF HYDROCARBONS

8.4.1 HAZARD

Vessel collision within the operational area could result in a release of MDO. As no refuelling is planned, this scenario is considered to be the worst-case hydrocarbon spill scenario.

The worst-case diesel spill scenario is due to a vessel tank rupture resulting in release to sea. The maximum worst-case credible spill volume of diesel has been calculated as 200 m^3 based on the largest fuel oil tank on any vessel used.

Smaller spills could occur due to damaged ROV hoses which could result in a release of hydraulic fluid to sea, or loss of primary containment on board the vessel.

8.4.2 OIL CHARACTERISTICS & FATE/WEATHERING DATA

8.4.2.1 Hydrocarbon Characteristics

Summarized below are the hydrocarbons expected to be present on- board during the activity. The information is sourced from the Material Safety Data Sheets. The following information is provided:

- Table 8.6 provides the physical characteristics of hydrocarbons present during activities; and
- Table 8.7 provides hydrocarbon weathering characteristics and the expected influence on oil spill response options.

In the event of an actual spill, the fate and weathering behaviour will be confirmed via field observations in accordance with the OSMP and OSTM.

Table 8-6 Summary of Hydrocarbon Types and Physical Properties

Hydrocarbon	Boiling Point Characteristics (°C)				Density (kg/m3)	Viscosity	Oil Group	Pour Point (oC)	Comment
	Volatile (%)	Semi-Volatile (%)	Low Volatile (%)	Residual (%)					
	<180	180-265	265-380	>380					
Marine Diesel	6.0	34.6	54.4	5.0	829.1@ 25oC	4.0cP@ 25oC	III	-6	Flash Point ~60°C
Hydraulic Oils	-	-	-	-	0.875@ 15oC	32000cSt	III	-30	Initial Boiling Point ~280°C
Lubricating Oils	-	-	-	-	0.86-0.88	Variable 30 to 240cSt	III	Low	Flash Point >100°C
Persistence	Non-Persistent			Persistent					

Table 8-7 Oil Behaviour and Characteristics

Property	Description of Hydrocarbon Behaviour at Sea
Marine Diesel (Used for fuel in vessel equipment, vessels and crane operations)	
Composition	Diesel is a mixture of volatile and persistent hydrocarbons with a low percentage of volatile hydrocarbons and a greater proportion having a moderate to low volatility. Combustible liquid.

Emulsification	Physical agitation by using propeller wash may assist in the evaporation and break up of spilled marine diesel however the potential exists to emulsify the hydrocarbon which can lead to decreased degradation rates. This response strategy is not recommended for MDO spills.
Weathering at Sea	Marine Diesel, although classified as persistent, will undergo rapid spreading and evaporative loss in high energy marine waters and slicks will quickly disperse/break up. *Containment and recovery operations for marine diesel in open waters are expected to be limited in effectiveness as the material spreads rapidly into thin layers which are not in recoverable thicknesses. Due to the rapid evaporation and dispersion of marine diesel, spilled material is preferentially monitored and allowed to naturally weather if no protection priorities are at risk.* During evaporative weathering, low molecular weight aliphatic and aromatic hydrocarbons are lost from the oil, leaving higher concentrations of less volatile, higher molecular weight hydrocarbons. The heavier components have a strong tendency to entrain in the upper water column as oil droplets in the presence of wind/waves but can re-float to the surface if energies abate (APASA, 2014). Under a 15^{o}C water temperature, 15knot MDO scenario it would be expected that after 1 day evaporation accounts for approximately 10% of the spill, 20% of the spill volume has been dispersed in the water column and 70% remains on the surface. After 5days surface oil is eliminated, 62% has been dispersed within the water column and 38% has evaporated (APASA, 2014).
Aromatic Hydrocarbon Content	Diesel is a light persistent petroleum distillate (predominantly C12-C14 hydrocarbon compounds) and has low concentrations of aromatic (soluble toxic) compounds (<3 mol%) (NOAA, 2013) with the majority of aromatics lying in the boiling point range.
Shoreline Behaviour	MDO is not sticky or viscous compared with black oils (i.e. some crude oils and HFO) it tends to penetrate porous sediments (sands) quickly, but also tends to be washed off quickly by waves and tidal flushing. MDO is readily and completely degraded by naturally occurring microbes within 1-2months (NOAA, 2013).
Hydraulic Oils	
Composition	Hydraulic oils are typically highly refined light to medium mineral oils, liquid under most environmental conditions and will spread on the sea surface. Spill, due to small volumes which could be spilled are expected to result in rapid disassociation.
Emulsification	Poorly soluble in water
Weathering at Sea	Oils are a mixture of non-volatile components with limited evaporation
Aromatic Hydrocarbon Content	Highly refined mineral oil. Low toxicity.
Shoreline Behaviour	*Not Applicable to activity*
Lubricating Oils	
Composition	Variable.
Emulsification	Oils may emulsify at sea leading to increased slick volumes.
Weathering at Sea	These oils have a moderate spreading and evaporation rate. Persistent at sea.
Aromatic Hydrocarbon Content	Lubricating oils typically have low aromatic content[10]
Shoreline Behaviour	*Not Applicable to activity*

8.4.2.2 Definition of EMBA

The EMBA has been defined by the low exposure thresholds provided in Table 5-2 to ensure a conservative impact assessment has been conducted on the potential area affected by a hydrocarbon spill. The outputs of the modelling for the low exposure threshold of each hydrocarbon phase were overlaid, and an outer line drawn around the limit of each phase of hydrocarbon to determine the EMBA. Therefore representing an area that may be affected by any phase of hydrocarbons (dissolved, entrained, surface or shoreline) at the lowest threshold for potential impact.

The modelling method described is able to track hydrocarbon concentrations of floating oil, entrained oil and dissolved aromatic hydrocarbons below biologically significant impact levels. Consequently, threshold concentrations are specified for the model to control what contact is recorded for surface (floating oil and shoreline accumulation) and subsurface locations (entrained oil and dissolved aromatic hydrocarbons) to ensure that recorded contacts are for biologically meaningful concentrations.

The determination of biologically meaningful impact levels is complex since the degree of impact will depend on the sensitivity of the biota contacted, the duration of the contact (exposure) and the toxicity of the hydrocarbon mixture making the contact. The toxicity of a hydrocarbon will change over time, due to weathering processes altering the composition of the hydrocarbon. To ensure conservatism in the environmental impact assessment process, the threshold concentrations applied to the model are selected to adopt the most sensitive receptors that may be exposed, the longest likely exposure times and the more toxic hydrocarbons. The following criteria have been used to determine hydrocarbon concentration thresholds whereby environmental impacts from hydrocarbon spills may be expected.
The low threshold is used to determine the EMBA, however biological effects are predicted to species at or above the moderate and high exposure thresholds, therefore these are also described below.

Surface Oiling

The low threshold selected to assess the potential for floating oil exposure, was 1 g/m^2, which equates approximately to an average thickness of 1 µm, referred to as visible oil. Oil of this thickness is described as rainbow sheen in appearance, according to the Bonn Agreement Oil Appearance Code (Bonn Agreement, 2009; AMSA, 2014). This threshold is considered below levels which would cause environmental harm and it is more indicative of the areas perceived to be affected due to its visibility on the sea surface and potential to trigger temporary closures of areas (i.e. fishing grounds) as a precautionary measure.

Ecological impact has been estimated to occur at 10 g/m^2 (a film thickness of approximately 10 µm or 0.01 mm) according to French et al. (1996) and French-McCay (2009) as this level of fresh oiling has been observed to mortally impact some birds through adhesion of oil to their feathers, exposing them to secondary effects such as hypothermia. The appearance of oil at this average thickness has been described as a metallic sheen (Bonn Agreement, 2009).

The following surface thresholds have been utilised for the purpose of impact and contact:

- **Environmental Contact Threshold**: 1g/m^2. This threshold relates to the minimum visual threshold observable which may invoke a community reaction. It is noted that clean- up and containment operations are not effective at these surface thresholds. **This determines the outer extent of the EMBA**.
- **Environmental/Ecological Impact Threshold**: 10g/m^2. This threshold relates to the threshold thickness of oil that could be harmful to intersecting wildlife (APASA, 2013);

Dissolved Aromatics

Based upon a review of global data for species impacts (115 fish, 129 crustaceans, 34 invertebrate species including sensitive lifecycle stages) associated with dissolved phase hydrocarbons (aromatics), French-McCay (2002, 2003) has established the following LC50 (96hr) values as reflected in Table 8.8. Average 96hr LC50 of 50ppb and 400ppb, assessed at water temperature of 25^{o}C, are typically used to define an acute threshold to

5% (moderate exposure) and 50% (high exposure) of biota respectively. The lowest threshold of 6 ppb has been utilised to define the EMBA, however the outer limit of the EMBA is driven by the surface oiling and therefore impacts from dissolved aromatics are well within the outer limits of the EMBA.

Table 8-8 Threshold Impact Levels for Dissolved Aromatic Hydrocarbons

Trigger Value for dissolved aromatic concentration for LC_{50} (96hrs) (ppb)	Equivalent dosage of dissolved aromatics over 96hrs (ppb.hrs)	Range of sensitive species potentially impacted from acute exposure	Level of Exposure
6	576	Very Sensitive Species (99^{th} percentile)	Low
50	4,800	Average Sensitive Species (95^{th} percentile)	Moderate
400	38,400	Tolerant Sensitive Species (50^{th} percentile)	High

Additionally, for some hydrocarbons (i.e. MDO) the aromatic content is low and those components are very volatile. Generally, for components <180°C most aromatic components evaporate within a few hours and for components in the boiling range 180-260°C evaporation/ dissolution will occur in one day (APASA, 2014). Accordingly, modelling results identifies that for these types of hydrocarbons (i.e. MDO) aromatics do not persist in the marine environment for the necessary exposure period (96hrs) to trigger the lowest thresholds. As a result of the small volume released and the tendency of diesel to evaporate when available to the atmosphere, in-water exposures from dissolved aromatic concentrations were found to be unlikely and therefore do not drive the outer limits of the EMBA.

Entrained Hydrocarbons

Entrained hydrocarbon has utilised the following instantaneous thresholds derived from OSPAR Predicted No Effects Concentration (PNEC) for dispersed oil for chronic hydrocarbon exposure and converted to appropriate acute exposure levels. Table 8.9 provides threshold values for entrained hydrocarbons over 48hrs.

OSPAR (2012) has published accepted PNEC for 'dispersed oil' of 70.5µg/l (70ppb) (for 5% affected fraction of species) and 804 µg/l (804 ppb) (for 50% affected fraction of species). These PNEC levels represent acceptable long-term chronic exposure levels from continuous point source discharges in the North Sea, one of the most concentrated areas in the world for oil and gas production. These PNECs have been based upon biomarker testing specifically looking at DNA damage and oxidative stress (Smit et al, 2009) for a variety of oils. Utilising methodologies contained in USEPA Guidelines (1986) to establish LC50 data from PNECs, LC50 values have been derived by applying a conservative factor of 100 (instead of 1,000 or 10,000) to the PNEC values and final exposure values assume a 48 hour exposure period. Note, using a 48 hour exposure period instead of a 96 hour period is again a conservative approach.

It should be noted that dispersed (entrained) oil thresholds previously adopted for oil spill trajectory modelling purposes have defaulted to thresholds sourced from ANZECC (2000) of 10 ppb (LC50 – 99% species protection), 100 ppb (LC50 – 95% species protection) and 500 ppb (LC50 – 50% species protection). These thresholds, based on the work of Tsvetnenko (1998), were measurements of the toxicity of dissolved phase oils and are not representative of dispersed (entrained) oil impacts. **The 700ppb trigger value for entrained oil concentrations (LC50 (48hrs) has been used to define the EMBA.**

Table 8-9Threshold Impact Levels for Entrained Hydrocarbons

Trigger Value for entrained oil concentrations LC_{50} (48hrs) (ppb)	Equivalent dosage of dissolved aromatics over 96hrs (ppb.hrs)	Range of sensitive species potentially impacted from acute exposure	Level of Exposure
700	33,600	Very Sensitive Species (99th percentile)	Low
7,050	338,400	Average Sensitive Species (95^{th} percentile)	Moderate
80,400	3,895,200	Tolerant Sensitive Species (50^{th} percentile)	High

Shoreline Accumulation Thresholds of Hydrocarbon

There are many different types of shorelines, ranging from cliffs, rocky beaches, sandy beaches, mud flats and mangroves, and each of these will influence the volume of oil that could be stranded ashore and its thickness before the shoreline saturation point occurs. For instance, a sandy beach may allow oil to percolate through the sand, thus increasing its ability to hold more oil ashore over tidal cycles and various wave actions than an equivalent area of water, hence oil can increase in thickness onshore over time.

French-McCay (2009) in a review of literature associated with oiling of inter-tidal habitats (wetland, rocky shore, gravel and sand beach, and mudflat) identified the following threshold observations for shoreline impacts:

- Marsh/Mangroves species: Oil thicknesses of more than 1mm (1000g/m2) during the growing season is expected to impact these species; and
- Inter-tidal Invertebrates: Oil thicknesses of 0.1mm (100g/m2) for benthic epi-faunal invertebrates on hard substrates (rocky, artificial/man-made, etc.) and sediments (mud, silt, sand or gravel).

These threshold levels have been nominated as trigger levels for possible impacts to these species with the **100g/m^2 used to determine the outer limits of the EMBA.**

8.4.2.3 Oil Spill Trajectory Modelling (OSTM) Results)

Modelling (APASA, 2014) has been undertaken for the maximum credible oil spill scenario associated with CHPLs decommissioning campaign to establish the maximum EMBA without oil spill response intervention. This is the marine diesel spill of 200m^3 over 6 hours at the WSH-3 location.:

Modelling of smaller volumes has not been undertaken as they are small in volume and consist of hydrocarbons which readily disperse and evaporate and will have a lesser footprint than those modelled.

It should be noted that the ZPI reflected in these plots is a compilation of 200 individual trajectory simulations, each commencing at a different time and under randomised wind and current conditions. The plot does not represent the ZPI from a single worst-case oil spill event. The EMBA represented on figures throughout Section 5 has been drawn around the outer edges of the ZPI shown below to capture the surface, entrained, shoreline and dissolved hydrocarbons at the low thresholds listed in Table 5-2 to ensure a conservative impact assessment has been conducted on the potential area affected by a hydrocarbon spill. Note that the EMBA is determined by the

- Surface: Light Exposure (1-10g/m^2) represents the EMBA as 1g/m^2 is the low exposure threshold
- Entrained: 700-7,050 ppb represents the EMBA as 700ppb is the low exposure threshold, as the Very Low exposure area represents anything less than 700ppb
- Shoreline: areas adjacent to the surface and entrained EMBA as contours were not produced from the modelling report, therefore to assume conservatism, the shoreline is included. However, a summary of shoreline oiling is also provided below using the determined thresholds for impact.

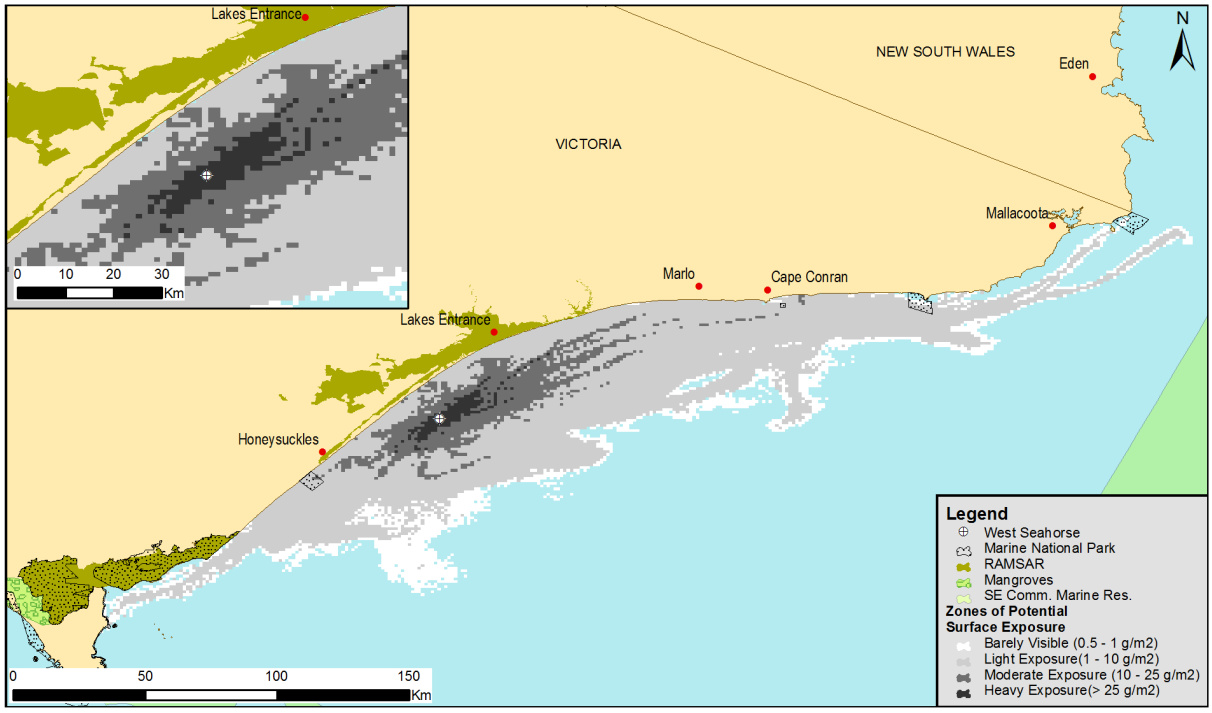


Figure 8.1: Potential zones of sea-surface exposure, in the event of a 200 m3 surface release of diesel over 6 hours, during annual wind and current conditions.

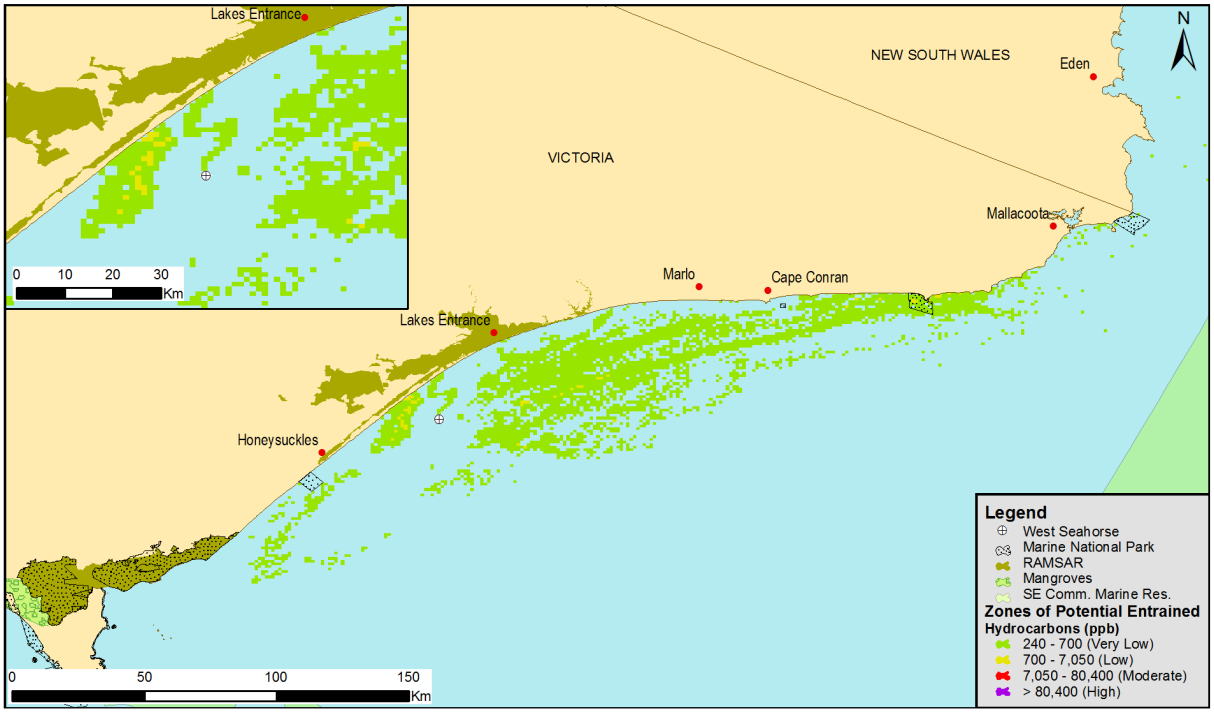


Figure 8.2: Maximum entrained hydrocarbon concentrations in the surface layer (0-10m), in the event of a 200 m3 surface release of diesel over 6 hours, during annual wind and current conditions.

Overall shoreline contact resulting from the scenario was 34.5%. Sections of the Victorian coastline predicted to be at greatest risk were Gippsland and Cape Conran Coast, recording a 22% and 15% probability of shoreline contact at a threshold of 100 g/m^2, respectively

The earliest shoreline contact above the minimum reported thickness threshold was 12 hours recorded on the one section of the coastline of Victoria (i.e. Gippsland Coast). The maximum volume of hydrocarbons that could accumulate onshore from a single spill was <0.1 m3 or (19.3 L).

In this instance, it is important to note that shoreline contact above the reported thickness threshold of 100 g/m^2 may have resulted from onshore accretion low concentrations of surface oil over time and eventually triggering contact above the 100 g/m^2 threshold. The maximum distance that surface oil was predicted at the moderate exposure level was 118km.

Table 8.10 provides a summary of the sensitive receptors within the EMBA from shoreline oil. Only five receptors are predicted to be contacted by oil at the shoreline.

Table 8-10 Summary of Sensitive Receptors and time to Oil Spill Impact from surface and shoreline oil (APASA 2014).

	Annual				
	Wilsons Promontory	Woodside Beach	Gippsland Coast	Croajingolong NP Coast	Cape Conran Coast
Maximum probability of contact (%) (above 100 g/m^2)	1	1	5	1	5
Maximum probability of contact (%) (above 1,000 g/m^2)	0	0	3	0	1
Minimum time before visible oil coming ashore (hours) [days]	55	40	12	65	37
Maximum peak load on shoreline (g/m^2)	329.8	394.6	2,488.0	262.1	2,528.4
Maximum oil volume on shoreline (m^3) [L]	<0.1 [2.3]	<0.1 [3.2]	<0.1 [8.9]	<0.1 [9.7]	<0.1 [11.1]
Maximum length of shoreline contacted above 100 g/m^2 (km)	10.0	13.0	21.0	5.0	25.0

The modelling indicated no zones of chronic exposure for this scenario; that is, for doses of exposure to the acute concentrations of entrained hydrocarbon for durations of 48 hours or greater.

8.4.3 KNOWN AND POTENTIAL ENVIRONMENTAL IMPACTS

Hydrocarbon spills will cause a decline in water quality and may cause chemical (e.g., toxic) and physical (e.g., coating of emergent habitats, oiling of wildlife at sea surface) impacts to marine species. The severity of the impact of a hydrocarbon spill depends on the magnitude of the spill (i.e., extent, duration) and sensitivity of the receptor. A surface release of diesel to the marine environment would result in a localised reduction in water quality in the upper surface waters of the water column near the location of the spill. Based on modelling results, shoreline accumulation greater than 1000 g/m^2 was predicted at the cape Conran Coast, though shoreline accumulation at or above 100g/m^2 was predicted at Wilsons Promontory, Woodside Beach, Gippsland Coast, Croajingolong NP Coast.

8.4.4 EVALUATION OF ENVIRONMENTAL IMPACTS

There is potential for a MDO spill in the event of vessel tank rupturing in the event of a collision, a mechanical failure, or loss of integrity on the vessel. Modelling as detailed in Section 8.5.3 shows localised impact only, and minimal shore contact. The impact from a Level 2 MDO spill as isolated local impacts with natural recovery expected within days, and for local fauna only. Management of such a spill is to be conducted under the West Seahorse Decommissioning Campaign (VIC/RL17) Oil Pollution Emergency Plan (Gippsland Basin) (WSH-CHP-60-RG-RA-0002, Rev 0, 17 Nov 2023).

Collisions with other vessels can be mitigated by hiring a competent captain and crews and notifying all vessels within the area of planned activities. The WSH-3 Petroleum Safety Zone (PSZ) further mitigates risks of collisions.

Mechanical failures will be mitigated by auditing vessel maintenance records and inspection of the vessel and its track record. No re-fuelling activities will be undertaken within the Operational Area, all such activities will be undertaken in port.

Entrained oil is oil that is dispersed within the water column as oil droplets. As such, insoluble compounds in oil cannot be absorbed from the water column by aquatic organisms, hence are not bioavailable through absorption of compounds from the water. Exposure to these compounds would require routes of uptake other than absorption of soluble compounds. The route of exposure of organisms to whole oil alone include direct contact with tissues of organisms and uptake of oil by direct consumption, with potential for biomagnification through the food chain (NRC, 2005). For oil spills released at surface, entrained oil is created in the top few meters of the water column through mixing of surface oil by wave action.

Dissolved hydrocarbons are taken up into organisms directly through external surfaces and gills, as well as through the digestive tract. Thus, soluble and semi-soluble hydrocarbons are bioavailable, whereas insoluble compounds in oil are not bioavailable to aquatic organisms. Laboratory studies have shown that the dissolved hydrocarbons exert the most effects on aquatic biota (Carls et al. 2008; Nordtug et al. 2011; Redman 2015). The mode of action is a narcotic effect, which is positively related to the concentration of soluble hydrocarbons in the body tissues of organisms (French-McCay, 2002). The volatilization rates of hydrocarbons from surface slicks are faster than the dissolution rates. Thus, dissolution from oil droplets in the water column is the main source of concentrations dissolved in the water.

8.4.4.1 IMPACTS TO FAUNA

Within the EMBA, are a number of species could be expected in the area as defined in Section 5.5. There is overlap of BIAs for the great white shark, pygmy blue whale, southern right whale and Indo-pacific dolphin. In addition, a further 11 birds BIAs overlap the EMBA.

Given the properties of marine diesel, dilution and dispersion from natural weathering processes, such as evaporation and ocean currents, indicate that the extent of exposure will be limited in area and duration. Minor accumulations on shorelines are expected with minimal contact from floating oil >10 g/m^2.

The susceptibility of marine fauna to hydrocarbons depends on hydrocarbon type and exposure duration. Given that exposures would be limited in extent and duration, exposure to marine fauna from this event is not expected to result in a fatality. Potential impacts to marine fauna within the EMBA from a hydrocarbon exposure are further described below.

Habitat modification, degradation, disruption or loss, deteriorating water quality, and marine pollution are identified as potential threats to a number of marine fauna species in relevant recovery plans and conservation advice (Section 5.5).

In the unlikely event of a vessel collision, the potential impacts to the environment would be greatest within a few kilometres from the spill when the toxic aromatic components of the fuel will be at their highest concentration. Diesel will rapidly lose toxicity with time and will spread thinner as evaporation continues. The consequence from smaller spills would be less than that of a vessel collision given the smaller volumes.

<u>Plankton</u>

There is potential for localised mortality of plankton due to reduced water quality and toxicity. Also, through physical contact of small oil droplets, plankton mobility, feeding and/or respiration may be impaired. Plankton could include the eggs and larvae of marine invertebrates and fish and therefore entrained oil could impact on recruitment of invertebrate/fish species. Effects will be greatest in the upper 10 m of the water column and areas close to the spill source where hydrocarbon concentrations are likely to be highest.

Plankton could include the eggs and larvae of marine invertebrates and fish and therefore impact on recruitment of invertebrate/fish species. The operational area have the potential to overlap with spawning of some fish species given the year round spawning of some species. In the unlikely event of a spill occurring, fish larvae may be impacted by hydrocarbons entrained in the water column. Following a hydrocarbon release a portion of the slick will rapidly evaporate and disperse in the offshore environment, reducing the concentration and toxicity of the spill.

Marine mammals

10 species of marine mammals (cetaceans and pinnipeds) were identified in the EMBA, with 4 listed as threatened. The EMBA overlaps BIAS for the pygmy blue whale (foraging), southern right whale (reproduction and migration) and the Indo-Pacific/spotted bottlenose dolphin (breeding). These threatened and migratory marine mammals could be present at low densities all year round within the operational area and EMBA.

Marine mammals can be exposed to oil when at the water surface. For marine mammals this can occur when surfacing within a slick to breathe or feed. For marine fauna surfacing in floating oil contact to sensitive areas may occur (e.g. eyes, mouth and respiratory system) creating irritation and potentially cell damage. Volatile compounds evaporating from surface oil may be inhaled by marine mammals, particularly when the oil is fresh and relatively unweathered. Inhalation of these compounds may cause damage to internal respiratory structures. It is generally considered that marine mammals with smooth skin (e.g. cetaceans) are less susceptible to coating of oil than those covered with hair given hair has a greater potential to trap and retain oil causing longer exposure times.

Entrained oil is oil that is dispersed within the water column as oil droplets. As such, insoluble compounds in oil cannot be absorbed from the water column by aquatic organisms, hence are not bioavailable through absorption of compounds from the water. Exposure to these compounds would require routes of uptake other than absorption of soluble compounds. The route of exposure of organisms to whole oil alone include direct contact with tissues of organisms and uptake of oil by direct consumption, with potential for biomagnification through the food chain (NRC, 2005). For oil spills released at surface, entrained oil is created in the top few meters of the water column through mixing of surface oil by wave action. Lethal and sublethal physical and toxic effects such as irritation of the yes and mouth and potential illness can occur.

Marine Reptiles

Four species of turtles were identified in the EMBA and they are all threatened species, however there are no BIAs overlapping the EMBA.

Lethal or sub-lethal physical and toxic effects such as irritation of eyes/mouth and potential illness can occur from entrained and dissolved oil. Turtles are also at risk of direct contact with surface hydrocarbons due to the chance of surfacing within a slick. Effects include irritation of eyes/mouth and potential illness. Surface respiration could lead to accidental ingestion of hydrocarbons or result in the coating of sensitive epidermal surfaces.
Contact with hydrocarbons that have accumulated on shorelines particularly at nesting beaches can cause oiling of eggs/hatchlings, though there are no nesting beaches identified in the EMBA. Shoreline hydrocarbons are expected to be less toxic than fresh oils due to weathering processes such as photo oxidation and biodegradation reducing the levels of lighter chain hydrocarbons which are generally more toxic.
The Recovery Plan for Marine Turtles in Australia: 2017–2027 (DoEE, 2017) highlights acute chemical discharge as one of several threats to marine turtles.

Birds

73 threatened bird species may occur within the EMBA, this is largely due to the presence of the RAMSAR wetlands along the coast. Eleven species have BIAs which overlap with the EMBA. Species may be impacted

by surface and entrained hydrocarbons while foraging (dive and skim feeding) with higher numbers expected during the breeding periods.

Birds can be exposed to oil when at the water surface. For birds this includes contact from diving into a slick or floating on the sea surface while feeding or resting. For marine fauna surfacing in floating oil contact to sensitive areas may occur (e.g. eyes, mouth and respiratory system) creating irritation and potentially cell damage. Volatile compounds evaporating form surface oil may be inhaled by marine mammals and reptiles, particularly when the oil is fresh and relatively unweathered. Inhalation of these compounds may cause damage to internal respiratory structures.

Birds are particularly susceptible to impact from floating oil in that feathers retain oil, particularly when the oil is 'sticky' (e.g. heavy crudes). The coating of oil on birds may hinder flight and feeding, reduce the ability of the bird to thermoregulate (control body temperature) and irritate/damage sensitive surfaces such as eyes, ears and nasal structures. Secondary impacts can occur through the ingestion of oil as birds attempt to preen contaminated feathers. Ingestion may lead to oil absorption and further toxic impacts. Surface oiling is less likely for lighter hydrocarbons such as diesel.

Fish and sharks

There are 44 fish species overlapping the EMBA, 15 of which are threatened species. Of these, only the great white shark has a breeding BIA that overlaps the Operational Area and also a foraging BIA that overlaps the EMBA. These threatened and migratory fish and sharks could be present at low densities all year round within the operational area and EMBA, and the great white shark is known to occur due to the BIA presence, however no population level impact would be expected in the event of a spill due to their feeding and behaviour in offshore oceanic waters i.e. not surface feeding; and the nature of a diesel release dissipate rapidly.

Hydrocarbon droplets can physically affect fish, sharks and rays exposed for an extended duration (weeks to months). Smothering through coating of gills can lead to the lethal and sub-lethal effects of reduced oxygen exchange, and coating of body surfaces may lead to increased incidence of irritation and infection. Fish may also ingest hydrocarbon droplets or contaminated food leading to reduced growth.
There is potential for localised mortality of fish eggs and larva due to reduced water quality and toxicity. Effects will be greatest in the upper 10 m of the water column and areas close to the spill source where hydrocarbon concentrations are likely to be highest. While fish, sharks and rays do not generally break the sea surface, individuals may feed at the surface. For diesel spills where a slick is expected to quickly disperse and evaporate, prolonged exposure to surface hydrocarbons by fish, shark and ray species is unlikely.

8.4.4.2 IMPACTS TO OTHER AREAS OF CONSERVATION SIGNIFICANCE

Surface oil can coat emergent habitats such as coral or rocky reefs, wetlands and intertidal and shoreline areas around islands or along coastlines. Habitats that can be affected include rocky shorelines, sandy beaches, wetlands and intertidal areas which may support seagrass, algae and coral reef communities.

Intertidal areas may be contacted at low tides where emergent habitat is coated by oil. Seagrass, algae and sessile fauna such as hard corals, soft corals and sponges may be smothered as well as small low mobility fauna that live in close association with these and other benthic habitats or within/on sediments. Smothering of intertidal photosynthetic organisms such as seagrass, algae and hard coral may reduce their capacity for photosynthesis (energy production) or lead to a toxic response at the cellular level. For seagrass and algae this could lead to plant death, shedding of leaves/thalli, reduced growth, reduced reproductive output/success and genetic mutation. These impacts could occur at the TEC *Giant Kelp Marine Forests of South East Australia,* although this is on the outermost limits of the EMBA.

Similarly, for hard corals, bleaching, colony death, reduced growth and reduced reproductive capacity may occur. Such impacts may be exacerbated if these organisms are already under stress from marginal

environmental conditions or if impacts occur during critical life-history stages (e.g. spawning periods). Small fauna smothered by oil may be hindered in their ability to move and feed or may suffer a toxic response from mortality to reduced growth rate or reproductive success. The coating of habitats can lead to secondary impacts to marine/coastal fauna. For example, marine turtles and shorebirds may be contacted by oil when using nesting beaches or when roosting/feeding along shorelines, respectively. Marine/coastal fauna may also ingest oil when feeding on coated habitats, e.g. dugongs or turtles ingesting coated seagrass/algae and shorebirds ingesting coated intertidal organisms such as molluscs and crabs.

Wetlands support the majority of the habitats listed above and are particularly important to seabirds and shorebirds. Impacts to the habitat/fauna receptors described above therefore have an impact on the values of these wetland areas, some of which are within marine parks. Impacts may include shoreline loading and attachment to fine substrates with indirect impacts to foraging habitats for birds and direct impacts to infauna. The EMBA overlaps two RAMSAR wetlands with the closest 14.5 km from the operational area.

Unplanned release of hydrocarbons will not have a 'significant' impact to any other areas of applicable conservation significance, as outlined in the box below.

The EMBA does not overlap any world heritage areas, national heritage listed places, AMPs. Impacts to RAMSAR wetlands are described above. The Upwelling East of Eden KEF is important for fisheries and biodiversity as well as species already described above. Therefore, impacts to this KEF could result in impacts to fauna in the area.

8.4.5 IMPACT ASSESSMENT

Table 8-10 presents the impact assessment for unplanned release hydrocarbons.

Table 8-11 Impact assessment for Unplanned release of hydrocarbons

Summary		
Summary of impacts	Decline in water quality and may cause chemical (e.g., toxic) and physical damage? (e.g., coating of emergent habitats, oiling of wildlife at sea surface, impacts to marine species, fisheries)	
Extent of impact	Localised – MDO spill modelled as and EMBA as shown in Figure 5.4.	
Duration of impact	Short-term (spill dispersion modelled to <72 hrs).	
Level of certainty of impacts	HIGH – The Bass Strait Area to be Avoided was established in acknowledgement of the risk posed by merchant vessels and petroleum infrastructure and smaller vessels.	
Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.	
Environmental Controls and Performance Measurement		
EPO 12: No loss of containment of hydrocarbon to the marine environment		
Control Measures	EPS	Measurement criteria
No refuelling to occur during activity	EPS-37: No refuelling to occur in the operational area	Bunkering records
No HFO/IFO to be used	EPS-38: Only marine diesel is utilised on board the vessel, HFO or IFO is not stored on the vessel	Fuel records

Shipboard Oil Pollution Emergency Plan valid and tested to ensure ability to respond to spills as required by MARPOL	EPS-28: In line with MARPOL Annex 1, support vessels over 400 gross tonnage will have a current Shipboard Oil Pollution Emergency Plan (SOPEP)/ Shipboard Marine Pollution Emergency Plan (SMPEP) and International Oil Pollution Prevention (IOPP) certificate	Exercise reports
		IOPP
		SMPEP/ SOPEP
Spill response kits	EPS-39: Vessels to have stocks of spill response kits/bins available and accessible onboard to respond to a spill as per their SOPEP	Records demonstrate spill response bins/kits are readily available and stocked
Implement Hibiscus Oil Pollution Emergency Plan (WSH-CHP-60-RG-RA-00021)	EPS-40: In the event of a tier oil spill implement the West Seahorse Decommissioning Campaign (VIC/RL17) Oil Pollution Emergency Plan (Gippsland Basin) (WSH-CHP-60-RG-RA-0002) to reduce environmental impacts due to spill	Incident Log
Drills and exercises undertaken in accordance with the OPEP	EPS-29: OPEP drills and exercises are conducted in accordance with the OPEP to test response arrangements between CHPL and contractors	Exercise records
Hose integrity checks	EPS-41: Preventive maintenance on ROV completed as scheduled to reduce the risk of hydraulic fluid releases to sea with a pre-deployment inspection completed to reduce the risk of hydraulic fluid releases to sea.	ROV maintenance and inspection records
Prevent third-party vessel entry to the area	EPS-42: The WSH-3 PSZ remains gazetted.	A copy of the WSH-3 PSZ is readily available.
	EPS-43: The location of the WSH-3 well is marked on navigation charts to assist other marine users in identifying the PSZ.	WSH-3 is marked on relevant Bass Strait navigational charts.
Competent incident management team and oil spill response personnel	EPS-25: OPEP describes minimum competency requirements of incident response personnel	Training and competency assessment records
Seafarer certification	EPS-44: Vessel crew are trained and competent, in accordance with Flag State regulations, to navigate vessels	Training records show crew competencies

Activity Assurance check	EPS-45: If the EP has not commenced within 12 months of EP acceptance, an assurance check will be undertaken to ensure: - the activity details are current - changes in legislation are identified - stakeholder consultation has been completed and stakeholder concerns addressed - Any additional notifications to stakeholders are issued as required - potential impacts and risks are still relevant - protected MNES search is completed to ensure any changes to species are identified - Review of any new marine park management plans relevant to the region - oil spill scenario is appropriate based on potential available vessels - EPOs and EPSs are appropriate - activity is acceptable and ALARP in accordance with the EP. If required, an MoC or revised EP will be completed and resubmitted to NOPSEMA if necessary, in accordance with Regulations 18, 19, 26(3) to (5), 38 and 39 of the Regulations.	EP review with documented evidence of any changes PMST reports MoC or revised EP as appropriate

Impact consequence (residual)		
Consequence	Likelihood	Risk rating
Minor	Unlikely	Low

Demonstration of ALARP

A 'low' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Additional controls considered and rejected are summarised below.

Control considered	**Potential benefit**	**Reasoning for rejection**
Require all support vessels involved in the activity to be double hulled.	Reduces the likelihood of a loss of hydrocarbon inventory in the highly unlikely event of a vessel collision, minimising potential environmental impact.	Large costs associated with vessel selection and by having an activity schedule determined by vessel availability considered grossly disproportionate compared to low risk of a vessel collision and low risk of a large diesel spill.

Demonstration of Acceptability

Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).	
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.	
Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding unplanned release of hydrocarbons.	

Legislative context	The EPS outlined in this EP align with the requirements of:
	• *OPGGS Act* 2006 *(Cth):*
	  ○ Section 280(2) – requires that a person carrying on activities in an offshore area under the permit, lease licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others).
	  ○ Part 6.6 (Safety zones and the area to be avoided).
	• *Navigation Act* 2012 *(Cth):*
	  ○ Chapter 6 (Safety of navigation).
	• OPGGS Act Section 572A-F
	  ○ polluter pays for escape of petroleum)
	• AMSA Marine Orders Part 91
	• MARPOL Annex I – Prevention of Pollution from Ships
	• Protection of the Sea (Prevention of Pollution from Ships) Act 1983
	• Protection of the Sea (Civil Liability for Bunker Oil Pollution Damage) Act 2008	

Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity. Additionally, IPIECA (1990-2005) Oil Spill Preparedness and Response Report Series, IPIECA (2015) Contingency planning for oil spill on water: Good practice guidelines for the development of an effective spill response capability.	
Environmental context	*Marine reserve management plans*	Not triggered by this hazard.
	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	A number of conservation advice, threat abatement plans and management plans identify marine pollution and/or habitat degradation or modification as a threat. The plans require appropriate mitigation measures to be implemented to prevent impacts to the fauna.
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	

	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. The impacts from this activity are short-term and localised. There is no risk of an oil release from the wells (due to the four cement plugs in each well). The maximum worst-case credible spill volume of diesel has been calculated as 200 m^3. The impacts from this activity are short-term (spill dispersion modelled to <72 hrs) and localised (MDO spill modelled as and EMBA as shown in Figure 5.4).
	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity, given the location and quantities of hydrocarbons involved. The impacts from this activity are short-term and localised. There is no scientific uncertainty, as the activity is well understood, and good practice is well defined. The Bass Strait Area to be Avoided was established in acknowledgement of the risk posed by merchant vessels and petroleum infrastructure and smaller vessels. The worst-case diesel spill scenario is due to a vessel collision. However, no incidents have been reported to this date, since the PSZ has been in effect since 2008.
	Principle C: 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 impacts from this activity are short-term and localised, and there are no impacts to the health, diversity or productivity of the environment for future generations as once the activities are completed the oil spill risk will cease.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		

As per OSMP.
Record Keeping
Audit and Inspection reports. Incident reports.

8.5 RISK: SPILL RESPONSE ACTIVITIES

8.5.1 HAZARD

Positioning a vessel in the operational area and conducting decommissioning activities will create multiple hazards during the period of the infrastructure removal, the largest being vessel presence which could result in vessel collision. Transiting to and from the area is covered under AMSA and the vessel SOPEP.

In the event of a hydrocarbon spill, contingency spill response activities will be undertaken to reduce the level of impact to sensitive receptors within the environment to ALARP. In summary, the response activities include:

- Source control;
- Monitoring, evaluation and surveillance;
- Natural recovery;
- Shoreline clean-up;
- Oiled wildlife response;
- Operational and scientific monitoring; and
- Waste management.

While response strategies are intended to reduce the environmental consequences of a hydrocarbon spill, poorly planned and coordinated response activities can result in a lack of or inadequate information being available, which can lead to poor decisions being made, thereby exacerbating or causing further environmental harm. An inadequate level of training and guidance during the implementation of spill response strategies can also result in environmental harm over and above that already caused by the spill. The greatest potential for impacts additional to those described for routine operations is from shoreline clean-up and oiled wildlife response operations where coastal and shoreline habitat damage and fauna disturbance may occur.

8.5.2 KNOWN AND POTENTIAL ENVIRONMENTAL IMPACTS

The SOPEP will provide detail on how response strategies will be implemented. Impacts from spill response activities undertaken by vessels have already been described in this EP throughout section 7 and 8, as these potential impacts are still possible during deployment of additional vessels for spill response.

The impacts below describe potential impacts from spill response activities to all known sensitive receptors in the EMBA. The key environmental impacts associated with the potential spill response strategies are provided together with a description of associated potential impacts to sensitive receptors. Some of these hazards are unique to spill response (e.g. shoreline clean-up, oiled wildlife response), impacts associated with vessel use are already described in this EP.

Light

Spill response activities will use vessels, which are required at a minimum to display navigational lighting and have night safety lighting. Field based spill response activities will only occur in daylight hours, although as some vessels may be moored overnight there is limited potential for night light spill from vessels to impact marine and coastal fauna habitats.

Lighting may cause behavioural changes to fish, birds and marine turtles which can have a heightened consequence during key life-cycle activities, for example turtle nesting and hatching. Turtles and birds, which includes threatened and migratory fauna (Section 5.5), have been identified as key fauna susceptible to lighting impacts that occur within the EMBA. Section 7.1 provides further detail on the nature of light impacts to fish, birds and marine turtles.

Noise

Spill response activities will involve the use of aircraft and vessels which will generate noise both offshore and in proximity to sensitive receptors in coastal areas. Spill response activities will also involve the use of equipment on coastal areas during clean-up of shorelines and monitoring activities (e.g. pumps, generators and vehicles), and for accessing shoreline areas (e.g. vehicles).

Underwater noise from the use of vessels may impact marine fauna, such as fish, marine reptiles and marine mammals which may impact key life-cycle process (e.g. spawning, breeding, calving). Underwater noise can also mask communication or echolocation used by cetaceans. Section 7.2 provides further detail on these impacts from vessels.

Spill response activities using vessels have the potential to impact fauna in protected areas; this includes the whale migration pathways.

Noise and vibration from terrestrial activities on shorelines also has the potential to cause behavioural disturbance to coastal fauna including protected and migratory species of shorebirds and turtles. Shoreline activities involving the use of noise generating equipment may take place in important nesting areas for turtles and/ or roosting/ feeding areas for shorebirds. As a consequence of impacts to fauna – including shorebirds, marine mammals, fish and sharks – noise has the potential to impact supported industries such as tourism and commercial fishing and recreational values of marine parks.

Atmospheric Emissions

The use of fuels to power vessel engines, generators and mobile equipment used during spill response activities will result in emissions of GHGs, such as carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O), along with non-GHGs, such as sulphur oxides (SOx) and nitrous oxides (NOx). Emissions will result in localised decreases in air quality (refer Section 7.3). Atmospheric emissions from spill response equipment will be localised; and while potential exists for fauna and flora impacts, the use of mobile equipment, vessels and vehicles is not considered to create emissions on a scale where noticeable impacts would be predicted. Emissions may occur in protected areas and areas where tourism is important; however, the scale of the impact relative to potential oil spill impacts is not considered great.

Operational discharges and waste

Operational discharges from vessels have been described (Section 7.4); though discharges may occur closer to shore during response operations. Cleaning of oil-contaminated equipment, vehicles and vessels has the potential to spread oil from contaminated areas to those area not impacted by a spill, potentially spreading the impact area and moving oil into a more sensitive environment.

The creation, storage and transport of oily waste and contaminated organics has the potential to spread impacts of oil to areas, habitats and fauna not previously contaminated.

Displacement or interference with other marine users

Spill response activities may involve the use of vessels, equipment and vehicles in areas used by the general public or industry. The mobilisation of spill response personnel into an affected area may also place increased demands on local accommodation and other businesses. The use of vessels in the nearshore and offshore environment and the undertaking of spill response activities at shoreline locations may exclude general public and industry use of the affected environment. As well as impacting leisure activities of the general public, this

may impact on revenue with respect to such industries as tourism and commercial fishing. The mobilisation of personnel to small communities has the potential to affect the local community through demands on local accommodation and business, reducing the availability of services to members of the public. Displacement of other users has been described (Section 7.5), though consultation will be required in the event of a spill to ensure communication with all users that may be affected by spill response activities;

8.5.3 EVALUATION OF ENVIRONMENTAL IMPACTS

There is potential for a MDO spill in the event of vessel tank rupturing in the event of a collision, a mechanical failure or loss of integrity. The maximum fuel on board can be limited at outset and other mitigating strategies (such as tank lightening, tank transfer, etc.) can be enacted to ensure the environmental impact is restricted to a Level 2 Oil spill (NATPLAN). The Environment Impact from a Level 2 MDO spill has isolated local impacts with natural recovery expected within days, and for local fauna only. Management of such a spill is to be conducted under the West Seahorse Decommissioning Campaign (VIC/RL17) Oil Pollution Emergency Plan (Gippsland Basin) (WSH-CHP-60-RG-RA-0002, Rev 0, 17 Nov 2023).

Collisions with other vessels can be mitigated by hiring a competent captain and crews and notifying all vessels within the area of planned activities. The WSH-3 Petroleum Safety Zone (PSZ) further mitigates risks of collisions.

Mechanical failures will be mitigated by auditing vessel maintenance records and inspection of the vessel and its track record. No re-fuelling activities will be undertaken within the Operational Area, all such activities will be undertaken in port.

The potential impacts of the vessel or shore based response activities include localised and temporary fauna behavioural disturbance. This can be minimised by limiting the time on location and ensuring the vessel specifications meet industry BEMP and the controls listed in this EP.

Impacts from spill response activities will undergo a NEBA analysis prior to implementation as described in the OPEP. This includes an assessment of the potential impact of the spill compared to the potential impact of response options being implemented. Behavioural impacts would be expected to MNES in the EMBA as a result of the vessel based activities responding to a spill.

8.5.4 IMPACT ASSESSMENT

Table 7.12 presents the impact assessment for Spill Response Activities.

Table 8-12 Impact assessment for Spill Response Activities.

Summary	
Summary of impacts	Spill response activities resulting in displacement or interference with other users, noise emissions, light emissions, atmospheric emissions, liquid waste discharges within the EMBA adjacent to shorelines and in the offshore marine environment.
Extent of impact	Localised – MDO spill modelled as and EMBA as shown in Figure 8-1.
Duration of impact	Short-term (spill dispersion modelled to <72 hrs).
Level of certainty of impacts	HIGH – The Bass Strait Area to be Avoided was established in acknowledgement of the risk posed by merchant vessels and petroleum infrastructure and smaller vessels.

Impact decision framework context	A – nothing new or unusual, represents business as usual, well understood activity, good practice is well defined.	
Environmental Controls and Performance Measurement		
Control Measures	EPS	Measurement criteria
Refer OPEP for detailed EPO, EPS and MC.		
Accepted OPEP in place	EPS-24: NOPSEMA-accepted OPEP in place prior to commencement of activity	OPEP
Competent incident management team and oil spill response personnel	EPS-25: OPEP describes minimum competency requirements of incident response personnel	Training and competency assessment records
AMOSC MSC/ AMSA MOU/ OSRL MSC valid for life of the EP	EPS-26: AMOSC & OSRL memberships allowing access to mutual aid arrangements for spill response crew and equipment via a Master Services Contracts (MSC) for life of EP	Current AMOSC & OSRL memberships and MSCs
	EPS-27: AMSA MOU (access to NRT and resources) for life of EP	AMSA MOU valid
Shipboard Oil Pollution Emergency Plan valid and tested to ensure ability to respond to spills as required by MARPOL	EPS-28: In line with MARPOL Annex 1, support vessels over 400 gross tonnage will have a current Shipboard Oil Pollution Emergency Plan (SOPEP)/ Shipboard Marine Pollution Emergency Plan (SMPEP) and International Oil Pollution Prevention (IOPP) certificate	Exercise reports
		IOPP
		SMPEP/ SOPEP
Drills and exercises undertaken in accordance with the OPEP	EPS-29: OPEP drills and exercises are conducted in accordance with the OPEP to test response arrangements between CHPL and contractors	Exercise records
Impact consequence (residual)		
Minor (based on the potential impacts from oiling equipment during spill response activities)		
Demonstration of ALARP		
A 'minor' residual impact consequence rating is considered to be ALARP and a 'lower order' impact. Control measures in place for vessel use as provided in this EP and the OPEP will reduce potential impacts to marine fauna, and these are consistent with current conservation advice. The assessed residual consequence for this impact is Minor and cannot be reduced further without grossly disproportionate costs. It is considered therefore that the impact of the activities conducted is ALARP. Further discussion on the NEBA required for spill response activities is provided in the OPEP.		
Demonstration of Acceptability		
Policy compliance	HPB Environment Policy objectives are met (most notably with regard to legislative compliance).	
Management system compliance	Section 9 describes the EP implementation strategy to be employed for this activity.	

Stakeholder engagement	Stakeholder consultation has been undertaken (see Section 4), with no concerns expressed regarding spill response activities.	
Legislative context	The EPS outlined in this EP align with the requirements of: • *OPGGS Act* 2006 *(Cth):* ○ Section 280(2) – requires that a person carrying on activities in an offshore area under the permit, lease licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others). ○ Part 6.6 (Safety zones and the area to be avoided).	
Industry practice	The consideration and adoption of the controls outlined demonstrates that BPEM is being implemented for this activity.	
Environmental context	*Marine reserve management plans*	Control measures implemented will minimise the potential impacts from spill response activities to protected areas and their values and to species identified in recovery plans and conservation advice as having the potential to be impacted.
	Species Conservation Advice/ Recovery Plans/ Threat Abatement Plans	Consistent with relevant species recovery plans, conservation management plans and management actions as oil spill response activities will reduce the potential impacts and align with those plans.
ESD principles	The EIA presented throughout this EP demonstrates that ESD principles (a), (b), (c) and (d) are met (noting that principle (e) is not relevant).	
	Principle A: Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The ENVID process considers both long-term and short-term considerations, including the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species and habitat level. There is no risk of an oil release from the wells (due to the four cement plugs in each well). The maximum worst-case credible spill volume of diesel has been calculated as 200 m^3. The impacts from this activity are short-term (spill dispersion modelled to <72 hrs) and localised (MDO spill modelled as and EMBA as shown in Figure 5.3).

	Principle 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.	There are no threats of serious or irreversible environmental damage from this activity. The impacts from this activity are short-term and localised. There is no scientific uncertainty, as the activity is well understood, and good practice is well defined. The Bass Strait Area to be Avoided was established in acknowledgement of the risk posed by merchant vessels and petroleum infrastructure and smaller vessels. The worst-case diesel spill scenario is due to a vessel collision. However, no incidents have been reported to this date, since the PSZ has been in effect since 2008.
	Principle C: 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 impacts from this activity are short-term (less than 7 days) and localised, and there are no impacts to the health, diversity or productivity of the environment for future generations as once the activities are completed the oil spill risk will cease.
	Principle D: The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision making.	The conservation of biodiversity and ecological integrity is a fundamental consideration of the ENVID process. CHPL's ENVID process determines impact consequence levels, considering the duration and extent of the impact, receptor recovery time and the effect of the impact at an ecosystem, species or habitat level.
Environmental Monitoring		
As per OSMP.		
Record Keeping		
Audit and Inspection reports. Incident reports.		

9 IMPLEMENTATION STRATEGY

The OPGGS(E) Regulation 22(1) requires that an implementation strategy be included in an EP. CHPL retains full and ultimate responsibility as the Titleholder of the activity and is responsible for ensuring that the environmental performance outcomes and standards outlined throughout Section 7 and 8 are adequately implemented.

CHPL is the Licence Holder and Operator of the blocks in which the wellhead removal activities are to be conducted. CHPL has entered a well management agreement with a company called Exceed for the management of well decommissioning and surveying operations. A Vessel Contractor shall be appointed for the vessel-based activity.

CHPL, Exceed and the Vessel Contractor recognise that the working interfaces between companies are key to safe, efficient and successful operations. As such, a review of all relevant and key company personnel roles and responsibilities has been undertaken. This provides full clarity and visibility of key company personnel roles, responsibilities, interfaces, deliverables, expectations, communication and reporting lines, and boundaries agreed by all companies as part of the interfacing arrangements.
Marine assurance will be completed by a third party and verified by CHPL and Exceed to ensure vessel briefings and risk assessments meet the requirements of the company and the EP.

9.1 ACTIVITY ORGANISATIONAL STRUCTURE

Figure 9-1 provides the key roles within the onshore and offshore teams that will support the wellhead removal activity, and demarcates the Primary Chain of Command, Organisational Reporting and Communications lines. CHPL has overall responsibility for the environmental management of the activity to ensure that:

- Design and execution of the activities is in accordance with industry best practice and legislated standards;
- All regulatory approvals are in place for the activity;
- The environmental impacts and risks of the activity are managed to be ALARP and acceptable;
- Environmental performance is monitored.

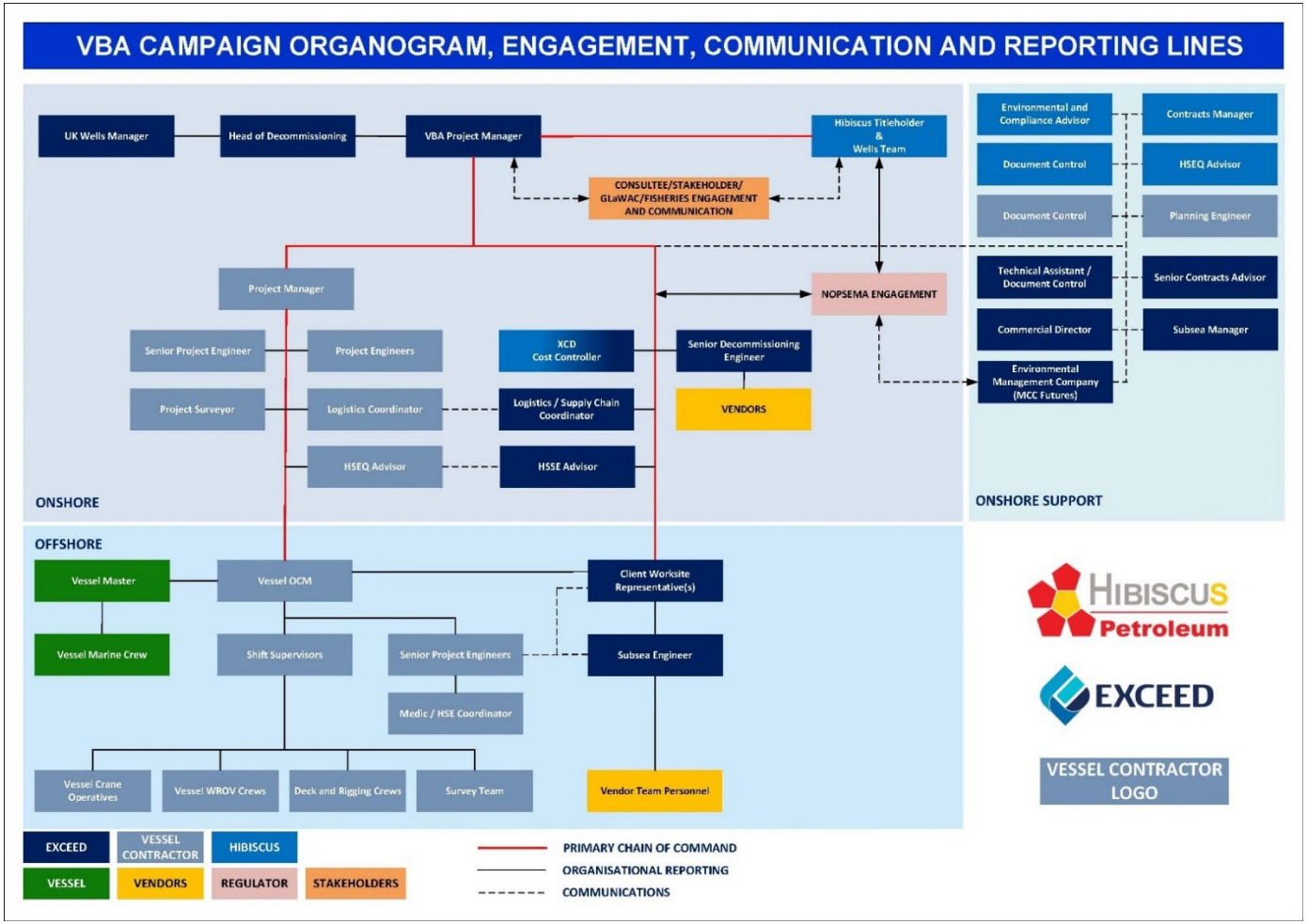


Figure 9.1: WSH-3 activity organisational structure

9.2 ROLES AND RESPONSIBILITIES

The OPPGS(E) Regulation 22(3) requires a clear chain of command is established for the activity with roles and responsibilities assigned to ensure efficient implementation of the EP.

The organisational structure for the activity is illustrated in Figure 9-1, while the environmental roles and responsibilities of key activity team members are summarised in Table 9-1. Given the small number of additional contractors required to perform on-water activities (vessel-based decommissioning activities), the organisational structure is relatively small for this activity. The personnel fulfilling the roles in Table 9-1 each have over 20 years' experience in managing petroleum activities and are cognisant of their environmental roles and responsibilities and are responsible for the management, drafting, review, submission and approval of all supporting documentation. This includes the EP, and other supporting documentation and permit applications to ensure all the well decommissioning works are carried out to fully meet Australian regulatory requirements and boundaries and other Australian and international legislative requirements.

Table 9-1 Roles and Responsibilities for the activity

Role	Environmental responsibilities
HBP CEO	• Ensures CHPL is adequately resourced to implement the EPS in this EP.
CHPL In-Country Manager	• Ensures that contractors have appropriate equipment and systems in place to undertake activities in accordance with industry best practice and this EP. • Undertakes consultation with government personnel. • Facilitates clear communication between CHPL and the Project Environmental Advisor. • Ensures compliance with this EP. • Prepares and issues routine and incident reports for submission to NOPSEMA. • Approves the Environmental Performance Report for submission to NOPSEMA. • Approves the end-of-activity notification for submission to NOPSEMA.
Project Environmental Advisor	• Undertakes stakeholder consultation. • Plans for the implementation of the EP. • Assists in the preparation of external regulatory reports required. • Assists with review, investigation and reporting of environmental incidents.
Wells Manager	• Has overall responsibility for the wellhead removal activity • Contract holder for the Exceed contract • Is the senior CHPL representative responsible and accountable for the overall activity within the CHPL organisation
Exceed VBA Project Manager	• Has overall accountability within the Project for the safety and efficiency of the wellhead removal activity planning and operations • Acts as the primary focal point for the project and is the primary interface between Hibiscus, Exceed and Vessel Contractor. • Acts as the Single Point of Contact between the Client Worksite Representatives on the vessel during the Offshore Execution Phase to ensure efficient and safe execution of the works

Client Worksite Representative	• On the vessel, shall manage the works locally on behalf of CHPL/Exceed on a day-to-day basis • Act as the Single Point of Contact between the Exceed VBA Project Manager and the vessel contractor project and vessel marine crew. • Ensure all works are carried out as per approved procedures, in a safe and efficient manner, with no harm to personnel or to the environment in compliance with the EP, and in line with all other relevant legislative and regulatory requirements

9.3 ENVIRONMENTAL MANAGEMENT SYSTEM

The OPPGS(E) Regulation 22(2) requires that an implementation strategy describe the environmental management system for the activity, which is described in this section.

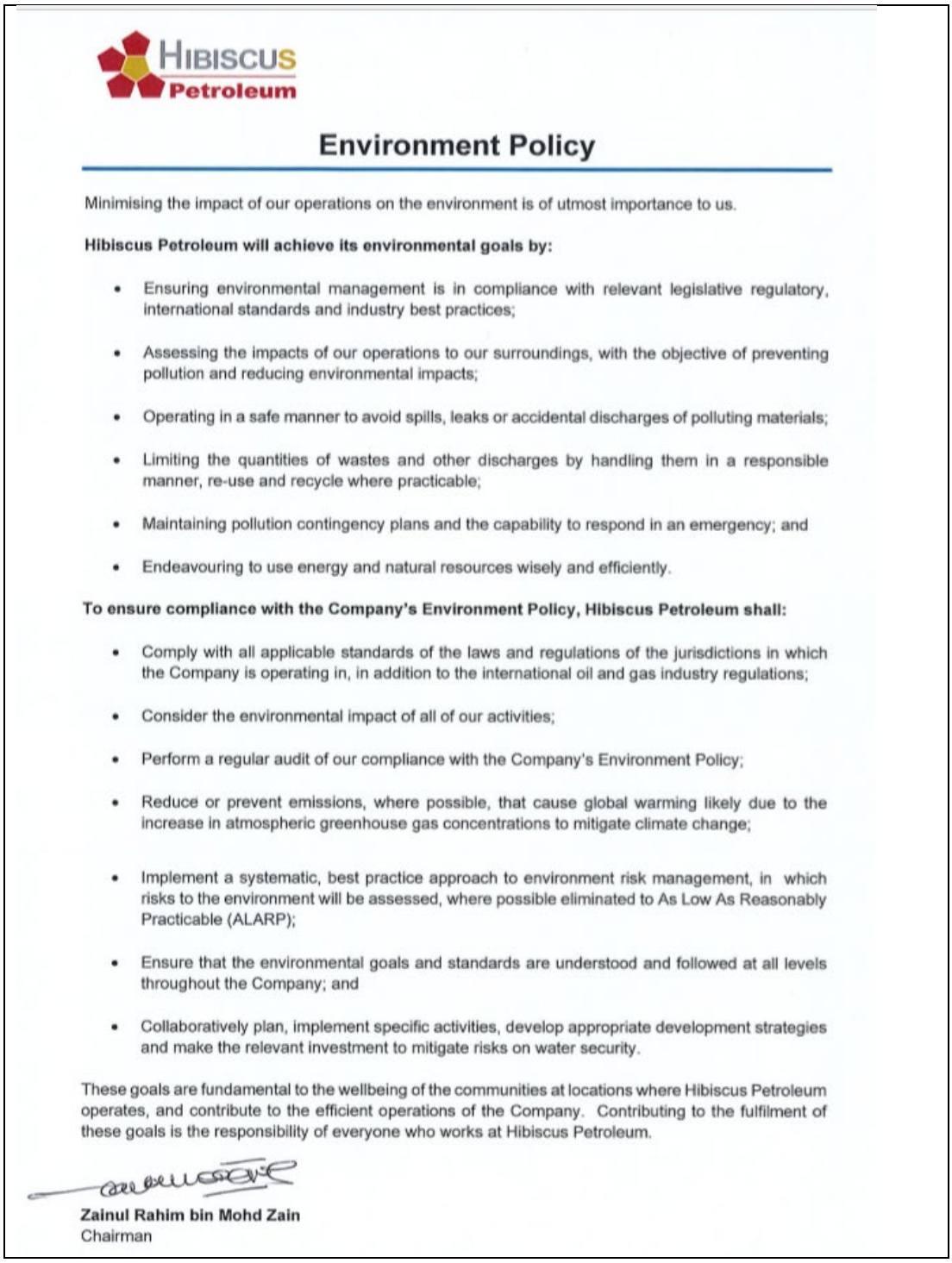
For this activity, CHPL adopts the HPB Management System Standards (MSS) (HPB-SP-CPL-SD01), which provides a framework for HSE management at HPB (and subsidiary) sites. The MSS applies to all aspects of operation and maintenance activities and includes contractors and other third parties operating on site.

The MSS is designed specifically to:

- Provide a set of performance standards covering the various aspects (or 'elements') of health, safety, security, environment (HSSE) and quality management, which are managed to ensure complete coverage of the assets and activities controlled by HPB.
- Provide an auditable trail from management's policy statements of HSSE and Quality through the MSS to the documents that define the physical activities on the operating sites managed by HPB.
- Be consistent with the international good practice standards for oil and gas operating companies for HSSE and Quality management.

The key HSSE and Quality performance standards of the MSS and their applicability to this EP are summarised in Table 9-2.

The HPB Environment Policy (HPB-00-GEN-HSSE-ENV-POL-NA-0001) is provided in Figure 9.2.



HIBISCUS Petroleum

Environment Policy

Minimising the impact of our operations on the environment is of utmost importance to us.

Hibiscus Petroleum will achieve its environmental goals by:

- Ensuring environmental management is in compliance with relevant legislative regulatory, international standards and industry best practices;
- Assessing the impacts of our operations to our surroundings, with the objective of preventing pollution and reducing environmental impacts;
- Operating in a safe manner to avoid spills, leaks or accidental discharges of polluting materials;
- Limiting the quantities of wastes and other discharges by handling them in a responsible manner, re-use and recycle where practicable;
- Maintaining pollution contingency plans and the capability to respond in an emergency; and
- Endeavouring to use energy and natural resources wisely and efficiently.

To ensure compliance with the Company's Environment Policy, Hibiscus Petroleum shall:

- Comply with all applicable standards of the laws and regulations of the jurisdictions in which the Company is operating in, in addition to the international oil and gas industry regulations;
- Consider the environmental impact of all of our activities;
- Perform a regular audit of our compliance with the Company's Environment Policy;
- Reduce or prevent emissions, where possible, that cause global warming likely due to the increase in atmospheric greenhouse gas concentrations to mitigate climate change;
- Implement a systematic, best practice approach to environment risk management, in which risks to the environment will be assessed, where possible eliminated to As Low As Reasonably Practicable (ALARP);
- Ensure that the environmental goals and standards are understood and followed at all levels throughout the Company; and
- Collaboratively plan, implement specific activities, develop appropriate development strategies and make the relevant investment to mitigate risks on water security.

These goals are fundamental to the wellbeing of the communities at locations where Hibiscus Petroleum operates, and contribute to the efficient operations of the Company. Contributing to the fulfilment of these goals is the responsibility of everyone who works at Hibiscus Petroleum.

Zainul Rahim bin Mohd Zain
Chairman

Figure 9.2: HPB Environment Policy

Table 9-2 Summary of the HPB MSS

Standard		Description
1	Leadership, Policy, Objectives and Compliance	This standard ensures there is an HPB Policy that is consistent with and meets the requirements of the governing legislation in all HPB operating jurisdictions. The preparation of this EP is consistent with meeting governing legislative requirements.
2	Organisation Responsibility	This standard addresses the commitment to an effective organisational structure for the implementation of the policies and objectives with a clear reporting line for ultimate responsibility to the Directors of HPB. The organisational responsibility is illustrated in this EP in Figure 9-1.
3	Information Management and Document Control	This standard addresses the need for information on the configuration and capabilities of processes and facilities, properties of materials handled, HSSE hazards, business critical matters and regulatory requirements to be used in managing risk and complying with laws and regulations. Information and document management is implemented in this activity through adherence to HPB's Management System Document Numbering and Control Procedure (HPB-IMG-GEN-PCD-01).
4	Risk Assessment and Risk Management	The aim of this standard is to prevent or minimise the likelihood of a hazardous event occurring by systematically identifying hazards. This has been implemented for this EP as described in Sections 2, 6, 7 and 8.
5	Operating Procedures	This standard provides for a healthy, safe and environmentally responsible and business efficient operation through the establishment of well-defined procedures. Relevant procedures have been referred and adhered to throughout this EP.
6	Communications, Consultation and Community Involvement	This standard provides for effective participation and consultative mechanisms that promote active communication and involvement of all personnel in the management of HSSE, the control of workplace hazards and engagement with the community's expectations and concerns. The consultation method employed for this EP is described in Section 4.
7	Employee Selection, Competency, Health and Training	This standard provides the requirements for employee selection in order to ensure that the HPB operations meet all laws and regulations, are safe, environmentally responsible, protect health and meet business requirements. Training, competency and selection relevant to this EP is described in Section 9.4.
8	Contractor and Support Services	This standard ensures that all contractors perform work in a healthy, safe and environmentally sound manner and compatible with the company's policies and objectives.

Standard		Description
		The selection of contractors for this activity is described in Section 9.4.
9	Procurement	This standard ensures that purchased products meet specified requirements and purchasing is carried out in accordance with procedures, which include third party supplier selection, ordering, and verification of product and traceability.
10	Design, Construction, Commissioning, Decommissioning and Abandonment	This standard ensures a system is in place to provide for the decommissioning and the long-term shutdown or abandonment of facilities. The status of the WSH-3 and Wardie-1 wells and the planned decommissioning of the wells is described in Section 2.
11	Maintenance, Inspection, Testing and Modification	This standard ensures the provision of maintenance and inspection programmes that maintain plant, equipment, structures and vessels in a safe and environmentally responsible condition. This standard is not relevant to this activity.
12	Change Management	This standard ensures a system is in place that manages both temporary and permanent changes covering the organisation, procedures, engineering, facilities and materials. The change management procedure for this activity is described in Section 9.3.
13	Emergency Response	This standard ensures emergency plans and procedures are in place to ensure the safety and protection of the employee, contractors, community, environment, and assets. The WSH-3 and Wardie-1 Decommissioning campaign will be conducted under an ERP and OPEP to ensure timely response and effective management of any emergency.
14	Incident Reporting and Investigation	This standard ensures a system is in place to report and then investigate each incident or near-miss incident which resulted in or could have reasonably resulted in a situation detrimental to the health and safety of personnel, the environment in which they work or have a significant impact on the business. Incident recording and reporting relevant to this activity is described in Section 9.6 of this EP.
15	Managing Materials, Waste and Discharges	This standard provides for a system to be in place that ensures the handle, use or disposal of materials involved with operations do so in a healthy, safe and environmentally responsible manner. Given operations will be undertaken as a vessel-based activity management of all materials, wastes and discharges will be included in the approved vessel SOPEP.
16	Performance Monitoring	This standard ensures a system is in place to monitor and assess operating performance to ensure that the processes and systems adopted are effective in meeting HPB policies and objectives, and legislative requirements. Performance reporting is described in Section 9.6 of this EP.

9.4 TRAINING AND AWARENESS

The OPGGS(E) Regulation 22(4) requires that employees and contractors working on the activity are aware of their environmental responsibilities in accordance with the EP.

9.4.1 Induction

To ensure all crews involved in the Decommissioning campaign understand the environmental constraints of operation and EPOs required, all offshore personnel will receive a CHPL Campaign Induction. The Vessel Master in conjunction with the Exceed Offshore Supervisor (Client Worksite Representative) is responsible for ensuring personnel receive this induction prior to undertaking activities.

The CHPL Campaign induction will be provided at the following times:

- **Pre-mobilisation Meeting**: Induction provided to vessel, offshore and marine contractors;
- **Pre-activity Meeting**: Provided to vessel, offshore and marine contractors; and
- **Vessel Arrival:** all parties arriving for first time.

Induction material will include:

- Adherence to the requirements of the accepted EP and associated regulatory requirements;
- Environmental sensitivities associated with the campaign (e.g. Proximity to shore, fauna, etc.);
- Environmental hazards (equipment, spills, waste/discharges, interaction with fauna) and required outcome standards;
- Environment, Health and Safety Policy
- EPBC Act Policy Statement 2.1 and how it applies to the activity;
- Operating environment (for example, nearby protected marine areas, sensitive environment periods etc);
- Trained crew on environmental matters, including information on the EPBC Act Policy Statement 2.1, whale identification and the environmental legal obligations that is specific to this EP:
    - Providing photos/pictures of the different megafauna expected in the area at the time of the geophysical activity,
    - Instructions on distance estimation, including the specification that marine binoculars with reticles are used,
    - Instructions on how to detect marine megafauna based on observations on the water surface and surrounds,
    - Instructions on data to be recorded for marine megafauna sightings, including time of observation, type and number of species observed and estimated location coordinated,
- The crew are able to provide observation whilst the vessel is entering the OA and prior to DP start-up.Key environmental management requirements (e.g. Marine Fauna Interaction, waste management);
- Incident reporting requirements with defined reportable/recordable environmental incidents associated with the campaign;
- Personnel roles and responsibilities during the campaign; and
- Spill preparedness and response arrangements.

All personnel are required to sign an attendance sheet to confirm their participation in and understanding of the induction. These records shall be retained by the CHPL Project Manager (Pre- activity) and Offshore Exceed HSE Advisor (vessel arrival) via the Vessel Safety Officer. These records will be maintained in the CHPL Sharepoint System.

9.4.2 Training and Competency

Vessel Contractors utilise marine crew who are trained and competent to undertake their respective activities. Vessel Watch crews will be competent to the *International Convention on Standards of Training Certification and Watch Keeping for Seafarers* (STCW95).

9.4.3 On-going Workforce Environmental Awareness/Participation

Programs on-board the Vessel will maintain an awareness of, and participation in, identifying environmental hazards and for allowing feedback on the effectiveness of control measures. The Vessel Master and Exceed Offshore Supervisor (Client Worksite Representative) are responsible for keeping the workforce informed about environmental issues and act as a focal point for personnel to raise environmental concerns. These positions will consult and involve all personnel in the following:

- Issues associated with the implementation of the EP;
- Any proposed changes to equipment, systems or methods of operation of plant where these may have environmental implications; and
- Any proposals for continuous improvement of environmental protection including the setting of environmental objectives and training.

Regular HSE Meetings will be held on-board the Vessel to maintain an awareness of environmental requirements. Minutes are taken of all HSE Meetings and all actions are managed through the Vessel contractor and CHPL Management systems.

A daily morning meeting between the CHPL Project Manager, Exceed Offshore Supervisor, Vessel Master and crew will be conducted where HSE items and lessons learnt will be discussed.

Other forms of internal communication include toolbox meetings and task-based hazard assessments prior to critical or unfamiliar jobs. For all personnel involved in potentially hazardous activities on-board the Vessel (e.g. requires a work permit, handling hazardous materials, etc.) a pre-job meeting is held where a Task-Based Risk Assessment (TBRA) will be undertaken to ensure that a full understanding of the hazards and risks, and the required safeguards associated with the task at hand. All TBRAS will be recorded on a TBRA form and stored in the Vessel contractor and CHPL Management systems.

9.5 ENVIRONMENTAL EMERGENCIES AND PREPAREDNESS

The OPGGS(E) Regulation 22(8) requires the development, implementation and testing of an Oil Pollution Emergency Plan (OPEP).

Because WSH-3 is plugged in accordance with international standards (as described throughout Section 2) the risk of hydrocarbon release from WSH-3 is the same as a permanently abandoned well. This limits the worst-case scenario risk form decommissioning activities to that of a Level 2 MDO spill.

The VIC/RL17 Oil Pollution Emergency Plan (OPEP) West Seahorse Decommissioning (WSH-CHP-60-RG-RA-0002) outlines the oil spill response arrangements and strategies adopted by CHPL for responding to oil spills from decommissioning activities in the Gippsland Basin consistent with the Hibiscus HSEQ Policy. The OPEP also addresses the requirements of International Conventions and the Commonwealth and State regulatory requirements as outlined in this EP. The practices adopted within the OPEP also follow those recommended by the International Petroleum Industry Environmental Conservation Association (IPIECA).

The OPEP document serves as a command and control tool and as a reference for CHPL related personnel and oil spill responders to facilitate an effective and timely response to any oil spills from CHPL's activities in the Gippsland Basin.

For Emergency Response facilitation, an Emergency Response Bridging Document shall be produced which shall define the responsibilities, primacy, actions and communication and reporting lines of CHPL, Exceed and Vessel Contractor personnel in the event an emergency situation or incident were to occur.

9.6 ROUTINE RECORDING AND REPORTING

9.6.1 Internal

Activity Reports

All environmental near-misses and incidents, including non-compliances with the EP EPO and EPS, will be communicated and reviewed internally in accordance with Standard 14 and 16 of the HPB MSS.

The Daily Report is distributed to CHPL by the Exceed Offshore Supervisor. HSE matters are discussed in the Daily Meeting held between Vessel contractor, Exceed and CHPL personnel.

The Exceed HSE Manager is responsible for generating a weekly HSE Report which is forwarded and reviewed by the CHPL Project Manager and senior CHPL management.

Incident Notification and Investigation

All environmental and serious near-miss incidents on-board the Vessels will be notified in accordance with CHPL requirements observing the minimum requirements contained in this EP for recordable and reportable incidents.

Any 'non-compliance' that may arise, from the boundaries stipulated in the EP, will be reported in the first instance by the Exceed VBA Project Manager. The Client Worksite Representative on the vessel shall ensure that the EP Compliance Action Register (CAR), is followed on-board the vessel at all times, and ensure that the Vessel Master understands what reporting obligations he may have.

All environmental incidents will be reported in the first instance to the Vessel Master and Exceed Offshore Supervisor, who will in turn notify the CHPL Project Manager. The CHPL Project Manager will notify NOPSEMA and other regulatory agencies as required. The CHPL Project Manager will manage actions arising from incidents via the *Corrective and Preventative Action Procedure* and all actions will be entered into the CHPL Action Tracker System, which will be monitored and closed-out by the CHPL Project Manager.

During induction and regularly throughout the program, the requirement to communicate incidents to Exceed and CHPL Management will be reinforced.

As a minimum, any recordable and reportable environmental incidents shall be investigated in accordance with the CHPL *Incident Reporting and Investigation Procedure*. Corrective and preventative actions taken to eliminate the cause of potential incidents will be commensurate with the magnitude of the environmental risks.

The results of incident investigations are communicated to relevant crews during standard forums such as HSE Meetings. CHPL will carry forward the identified corrective/preventative actions from incidents for consideration in future campaigns to ensure 'lessons learnt' are captured, and to assist with continuous improvement in environmental management, or to provide frequency data (i.e. likelihood determination) associated with decommissioning operations.

Corrective Action Management

The CHPL Project Manager will manage actions arising from incidents via the *Corrective and Preventative Action Procedure* and all actions will be entered into the CHPL Action Tracker System, which will be monitored and

closed-out by the CHPL Project Manager. Close-out of actions arising will only be undertaken by the Project Manager when documentation is provided, or records sighted which verify the corrective action has been implemented.

All records shall be stored in accordance with the WSH *Project Control Requirements for Contractors Procedure* and maintained on the CHPL Sharepoint system.

9.6.2 External

Regulation 25 of the OPGGS specifies that consultation with relevant authorities, persons and organisations must take place in the course of preparing an EP. This consultation includes an implicit obligation to report on the progress of the activity. Table 9-3 outlines the routine reporting obligations that CHPL will undertake with external organisations.

Table 9-3 External routine reporting obligations

Requirement	Timing	Contact details	OPGGS(E)
Submit an annual performance report to NOPSEMA.	Within 3 months of the end of the activity	submissions@nopsema.gov.au	Reg 51
Notify NOPSEMA of the end of the operation of the EP.	Submit with EP Performance Report.	submissions@nopsema.gov.au	Reg 46

9.6.3 INCIDENT RECORDING AND REPORTING

Regulation 5 of the OPGGS(E) defines the following incident types:

- Recordable incident – a breach of an EPO or EPS in the EP that applies to the activity that is not a reportable incident.
- Reportable incident – means an incident relating to the activity, that has caused, or has the potential to cause, moderate to significant environmental damage.

CHPL interprets 'moderate to significant' environmental damage as being those consequences in the HPB consequence definitions (see Table 6-2) as having a consequence of 'major', 'severe' or 'catastrophic'. For this activity there are no identified impacts or risks with these consequences (as outlined throughout Section 7).

Table 9-4 presents CHPL's reporting obligations in the case of recordable and reportable incidents.

Table 9-4 External reportable incident reporting obligations

Requirement	Timing	Contact
Recordable incidents		
As a minimum, the written recordable report must contain: • A record of all recordable incidents that occurred during the calendar month; and • All material facts and circumstances concerning the recordable incidents that	As soon as practicable after the end of the calendar month, and in any case not later than 15 days after the end of the calendar month.	submissions@nopsema.gov.au

Requirement	Timing	Contact
the titleholder knows or is able, by reasonable search or enquiry, to find out; and • Any action taken to avoid or mitigate any adverse environment impacts of the recordable incidents; and • The corrective action that has been taken, or is proposed to be taken, to stop, control or remedy the recordable incident; and • The action that has been taken, or is proposed to be taken, to prevent a similar incident occurring in the future.		
Reportable incidents – verbal notification		
Reportable incidents are defined in the paragraph preceding this table. The notification must contain: • All material fact and circumstances concerning the incident. • Any action taken to avoid or mitigate the adverse environmental impact of the incident. • The corrective action that has been taken or is proposed to be taken to stop control or remedy the reportable incident.	Within 2 hrs of becoming aware of the incident.	TBA
Reportable incidents – written notification		
A written report must follow a verbal notification of a reportable incident to NOPSEMA. As a minimum, the written report must contain: • All material facts and circumstances concerning the reportable incident that the titleholder knows or is able, by reasonable search or enquiry, to find out. • Any action taken to avoid or mitigate any adverse environment impacts. • The corrective action that has been taken, or is proposed to be taken, to stop, control or remedy the incident. • The action that has been taken, or is proposed to be taken, to prevent a similar incident occurring in the future.	As soon as practicable, and in any case not later than 3 days after the first occurrence of the reportable incident.	submissions@nopsema.gov.au

9.6.4 ENVIRONMENTAL PERFORMANCE REPORTING

In accordance with OPGGS(E) Regulation 22(7), CHPL will submit to NOPSEMA an annual Environmental Performance Report. Given the short duration of this activity, the report will be submitted within 3 months of the cessation of the activity. The report must contain sufficient information to determine whether or not environmental performance outcomes and standards in the EP have been met.

In accordance with OPGGS(E) Regulation 50, CHPL will report recordable environmental incidents to NOPSEMA on a monthly basis during the activity.

9.7 CHANGE MANAGEMENT

CHPL adopts the HPB Management of Change Procedure (HPB-SP-DOC-PCD02) that defines the method, level of documentation required and process for initiating changes to CHPL work programs. All Management of Change (MOC) must undergo a risk hazard review, where severity and probability of the change to the program are reviewed, considered and, if required, mitigated. Once an MOC has been generated, it must be submitted to the relevant facilitator for documenting and tracking.

The Exceed Supervisor will maintain an awareness of the Management of Change activities on-board the Vessel during the decommissioning campaign, ensuring the changes are assessed for compliance with the requirements of the accepted EP; and for change activities which have the potential to significantly increase environmental impacts or risk. All Management of Change's (MOCs) generated shall be communicated to the relevant offshore and onshore personnel for visibility and awareness accordingly.

Decommissioning Program related change events will be managed in accordance with the CHPL *Management of Change Procedure.*

Any proposed changes to the EP must consider Regulations 18, 19, 26(3) to (5), 38 and 39 of the Regulations and determines if a proposed change can proceed and the manner in which it can proceed. An internal assessment of the proposed change will determine whether a revision of the EP is required and whether that revision is to be submitted to NOPSEMA. For a change to proceed, the associated environmental impacts and risks must be demonstrated to be acceptable and ALARP. Additional stakeholder consultation may be required, depending on the nature and scale of the change.

Following EP acceptance, new information relevant to the EP may become available, such as new management plans for Australian Marine Parks, new recovery plans or conservation advice for threatened or migratory species, and changes to the Protected Matters Search results. If a review identifies new information, this is treated as a "Change that has an impact on EP", and the MoC process is followed accordingly.

Where there is an identified change from the accepted EP content, a check is done to test the 'significance' of the change, to determine whether it can be accommodated which may then result in an MoC as described above.

9.8 MONITORING, AUDITING, NON-CONFORMANCE AND REVIEW

The OPGGS(E) Regulation 22(5) requires that monitoring, auditing, management of non-conformance and review of environmental performance are described in an EP.

The objective of the monitoring, audit and review program for the WSH-3 and Wardie-1 Decommissioning Campaign is to ensure the EP EPOs are observed, verified and measured; EP controls are implemented, and performance verified; emissions and discharges are recorded and the EP implementation strategy is assessed for effectiveness. These activities assist CHPL to review environmental performance with a view to continuous improvement.

Collation of information provided by control measure 'custodians', EPO incident records and emissions/discharge records allows the Exceed HSE Advisor to assess environmental performance against nominated EPOs and standards.

9.8.1 EMISSIONS/DISCHARGE MONITORING, QUANTIFICATION AND REPORTING

CHPL will maintain a quantitative record of emissions and discharges as required under Regulation 22(6) of the OPGGS(E). These records will include all emissions and discharges to the environment. Results will be reported in the end-of-program EP compliance report submitted to NOPSEMA.

Monitoring parameters provided in Table 9-5 identify the emission and discharge parameters which will be monitored during the activity and forms a consolidated list of items.

Table 9-5 WSH-3/Wardie-1 Decommissioning Campaign Discharge/Emissions Monitoring Program

Discharge	Parameters	Record	Responsibility
Atmospheric Emissions			
Atmospheric Emissions	Quantity of Marine diesel used by the Vessel	Daily Fuel Use Log	Vessel Master
Discharges to sea			
Sewage/Grey Water discharge (if any)	Volume of sewage discharges	Garbage Record Book	Vessel Master
Oily water discharged to sea	Volume and location of discharge	Oil Record Book	Vessel Master
Garbage (including food scraps)	Volume and location of discharge	Garbage Record Book	Vessel Master
Unplanned release of solids or hydrocarbons	Volume and type	Incident report	Vessel Master
Disposal of wastes			
Hazardous Wastes	Volume of hazardous wastes transferred onshore.	Garbage Record Book / Oil Record Book	Exceed Materials Coordinator
Solid Non-biodegradable Wastes	Volume of non-hazardous wastes transferred onshore.	Garbage Record Book	Exceed Materials Coordinator

The Exceed HSE Advisor is responsible for the collation of this information and for the acquisition of records to support discharge volumes. Records will be stored in the CHPL Sharepoint system.

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Appendix 1 INFORMATION FLYER

WEST SEAHORSE-3 TEMPORARILY ABANDONED WELL
WARDIE-1 ABANDONED WELL
Invitation to Comment

SUMMARY

Carnarvon Hibiscus Pty Limited (CHPL), a wholly owned subsidiary of Hibiscus Petroleum Berhad (Hibiscus Petroleum), is the titleholder of retention license VIC/RL17 (formerly production license VIC/L31) in eastern Bass Strait. The West Seahorse-3 (WSH-3) well is located within this license area and is temporarily abandoned (suspended). The Wardie-1 well also lies within this permit, (approximately 2.8m distance from WSH-3) and is abandoned with a short section of surface conductor remaining approximately 2m above the seabed.

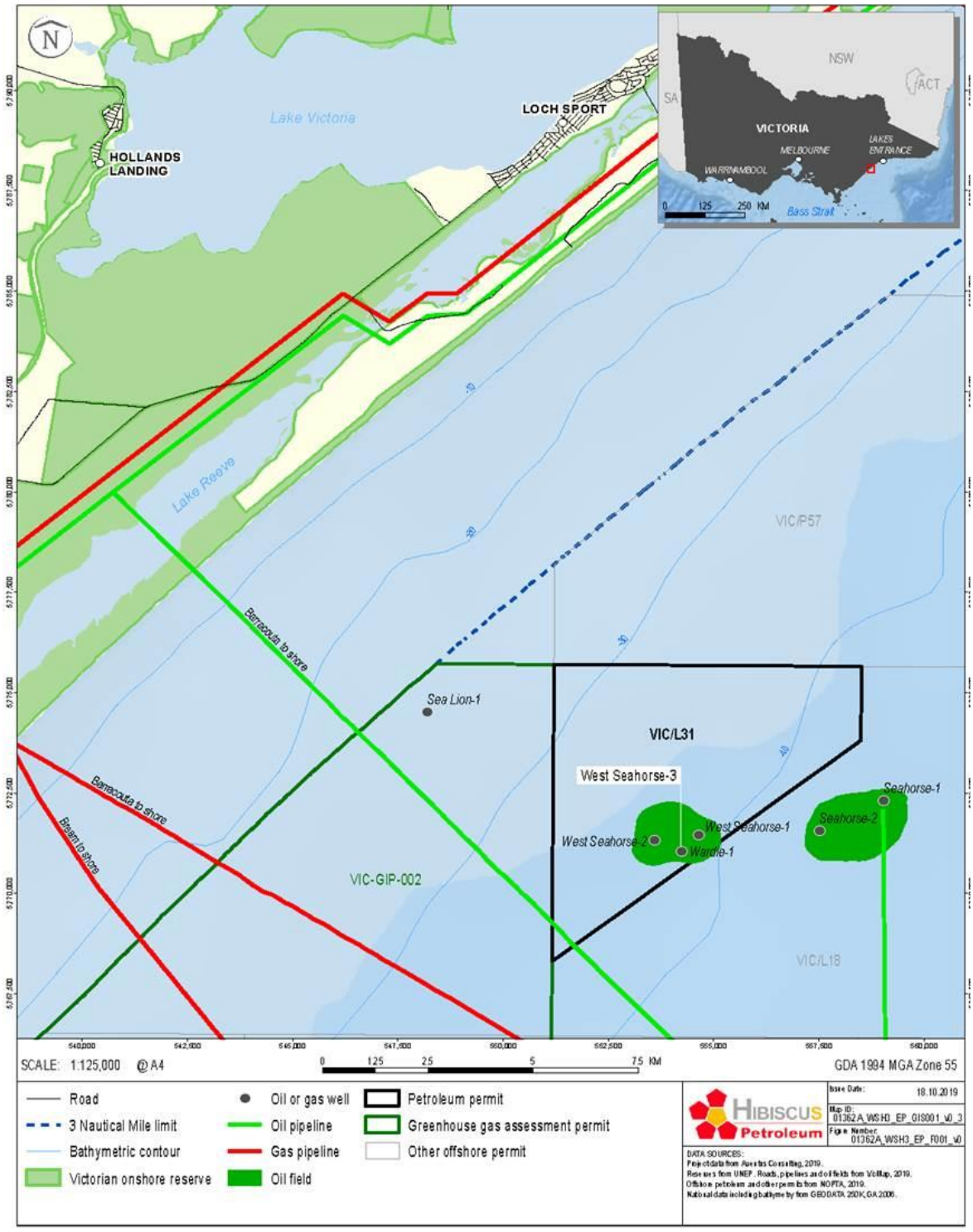
Both wells were originally drilled in 2008 by 3D Oil Limited (3D Oil) and temporarily abandoned / abandoned in accordance with international standards. There have been no further works on WSH-3 or Wardie-1 since this time.

In accordance with its obligations under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act), CHPL developed an Environment Plan (EP) to continue the non-production operations phase of WSH-3 until such time that it is completed as a producing well or it is permanently abandoned.

CHPL is now revising this EP to include the remaining Wardie-1 surface conductor and to permanently abandon and fully decommission both wells and is seeking to engage with relevant persons whose functions, interests or activities may be affected by the existence of the WSH-3 suspended well, or the Wardie-1 abandoned well.

LOCATION

The WSH-3 wellhead is located in eastern Bass Strait approximately 13 km off the Gippsland coast in a water depth of 39.5 m (see location map below). Wardie-1 is adjacent to WSH-3 approximately 2.8m away.



The WSH-3 well coordinates are:

Latitude: 38° 12’ 24.9422” S (5,771,044.135 N)

Longitude: 147° 37’ 09.8649” E (554,229.358 E).

The Wardie-1 well coordinates are:
Latitude: 38° 12’ 24.881” S (5,771,046.028 N)
Longitude: 147° 37’ 09.793” E (554,227.625 E).

WELL HISTORY

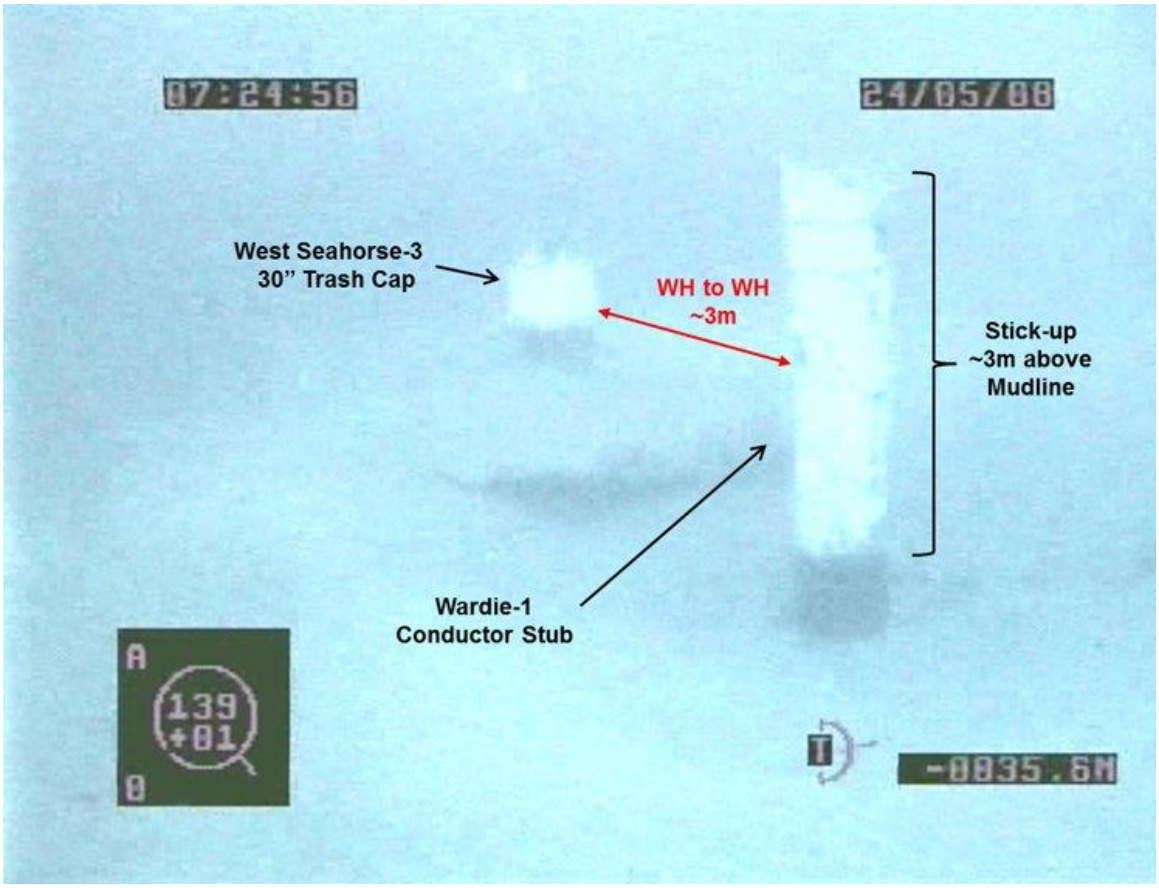
WSH-3 and Wardie-1 were originally drilled by 3D Oil in early 2008 in the then Exploration Permit VIC/P57.

The objectives of the WSH-3 well were to appraise and develop the oil-bearing sandstones of the Latrobe Group in the West Seahorse field, originally discovered by drilling the West Seahorse-1 well in 1981. The well confirmed the presence of oil in a high-quality reservoir.

Following completion of the well, WSH-3 was successfully temporarily abandoned in early May 2008 in accordance with international well integrity standards, which involved the installation and testing of four cement plugs to prevent any hydrocarbons flowing to surface. A temporary abandonment cap was installed over the conductor casing and protrudes 2 m above the seabed and measures approximately 1.1 m in diameter (see image below). This cap is designed to prevent damage to the wellhead from marine growth and third-party activities (such as trawler drag or anchor drop).

Wardie-1 was a deviated exploration well drilled immediately following WSH-3 from an adjacent slot and the wells are approximately 2.8 m apart. The main objectives were the Eocene sandstones intersected in the West Seahorse oil field. Results indicated the potential recoverable oil volume was not considered significant enough to justify suspension of the well. Wardie-1 was successfully plugged and abandoned in May 2008 in accordance with international standards for well integrity. Despite numerous attempts the conductor could not be pulled free. As a result the landing string was backed out and released casing pulled to surface. The 30” conductor remains in-situ approximately 3 m above the seabed. Given its location, Wardie-1 is incorporated into the associated Safety Zone for WSH-3.

Since CHPL’s acquisition of VIC/L31, there have been no further works on either well. The WSH-3 wellhead remains temporarily abandoned in place until such time as it is permanently abandoned, and the Wardie-1 conductor remains approximately 2.8 m from WSH-3 and 2.8 m above the seabed.



WSH-3 well and temporary abandonment cap / Wardie1 Conductor Stub

THE TITLEHOLDER

Hibiscus Petroleum is Malaysia's first listed independent oil and gas exploration and production company and is headquartered in Kuala Lumpur. Its key activities are focused on monetising producing oilfields and growing its portfolio of development and production assets.

CHPL acquired the VIC/P57 permit in December 2012 and successfully applied for a Production Licence (VIC/L31) over a portion of the block holding the West Seahorse Field, which was granted by the National Offshore Petroleum Titles Authority (NOPTA) in December 2013. In September 2014 CHPL purchased 3D Oil's share in the permit. CHPL has since been the 100% titleholder and Operator of VIC/L31. CHPL successfully applied for a Retention Lease (VIC/RL17) which was granted in November 2021

ENVIRONMENTAL CONSIDERATIONS AND REGULATORY APPROVALS

CHPL is cognisant of the ecological and socio-economic values of the Gippsland marine environment and has developed an EP for submission to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) which was accepted in 2019. The EP described the known and potential impacts and risks on the environment of the well and detail control measures to manage these impacts and risks. CHPL is revising the EP to include the Wardie-1 conductor stub.

CHPL will be undertaking a vessel-based campaign to sever both conductors at or below the seabed and remove them from location. They will be returned to an onshore supply base, cleaned, and recycled or disposed as per best industry practice. They are made from steel and other than some possible marine growth, no other materials are included.

A 300-m radius Petroleum Safety Zone (PSZ) (0.283 km^2) has been in place around the well since 2008, and this is the defined operations area for this activity. The risk of a vessel based marine diesel oil (MDO) spill has been assessed and preliminary modelling has shown under worst case scenario conditions that the majority contents of any marine diesel oil spill would be fully adsorbed into the water column or evaporated and limited particles would make landfall. Stringent operating practices and preventative measure limit the likelihood of any MDO spill to be extremely low during the proposed operations and further mitigating strategies limit the potential volume of any potential spill.

The impacts arising as a result of the abandonment operations phase are limited to those associated with the physical presence of the WSH-3 well (and the temporary abandonment cap), the Wardie-1 surface conductor, and the associated PSZ (such as the exclusion of trawling activity in this PSZ), and very low-level impact of an MDO spill contacting the shore line should the operating vessel be involved in a collision.

STAKEHOLDER CONSULTATION

Under the OPGGS Act and associated environmental regulations, the operator of an activity must engage with ‘relevant persons’ (i.e., government agencies, organisations and individuals) whose functions, interests or activities may be affected by an offshore petroleum activity.

You have been identified as a potential relevant person for this activity. The purpose of this email is to inform you of the presence of WSH-3 and Wardie-1 conductor, establish a communication channel and determine whether you may be impacted by the presence of the well or the proposed decommissioning activities.

Accordingly, CHPL invites your comments on the existence of this suspended well and surface conductor to enable it to fully consider the potential impacts of this activity, which will assist in refining the control measures in the revised EP that aim to protect the environment and minimise disruption to marine users.

Should CHPL not receive a response from you in the coming weeks, we will endeavour to re-make contact with you to solicit your views. Please note that you may request that any information you provide during the consultation be not published in the revised EP.

If you would like further information about CHPL's WSH-3 and Wardie-1 suspended well operations or would like to provide feedback on how your functions, interests or activities may be affected by the well, please contact us using the details provided below. The revised EP for this activity will be re-submitted in November 2023.

CONTACT DETAILS

Brad Girdwood
Drilling and Project Environmental Advisor
Exceed Australasia
girdwood.b@xcd.com
0429 059 078

Appendix 2 CURRENT ENGAGEMENT LOG

Table 1: Relevant persons' current engagement log

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
Category 1 – Department or agency of the Commonwealth to which the activities to be carried out under the EP may be relevant					
Australian Fisheries Management Authority (AFMA) – contact 1	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	10-Oct-23 Email	RECEIVED	Apologised for delayed response, no specific comments and encouraged to reach out to fishing operators in the area and provided details of relevant industry associations.	AFMA	No further action, suggested groups already contacted. Include in ongoing consultation.
	26-Jun-24 Email	SENT	Email following up to find SSFA contact.	AFMA 2	Awaiting reponse.
	1-Jul-24 Email	RECEIVED	Email advising SSFA closed a few years ago and association no longer exists.	AFMA 2	Noted.
	1-Jul-24 Email	SENT	Acknowledgement email.	AFMA 2	No further action.
Australian Fisheries Management Authority (AFMA) – contact 2/3	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	25-Oct-23 Email - Resent information Flyer	SENT	Follow up email sent to Relevant Person. Delivery and Read receipts confirmed.	Gen L	Awaiting response.
	26-Oct-23 Email	RECEIVED	Email received confirming no comments.	AFMA 1	No further action. Include in ongoing consultation.
Australian Hydrographic Office (AHO)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	12-Sep-23 Email	RECEIVED	Acknowledged receipt, confirmed data received will be registered, assessed, prioritised and validated in preparation for updating Navigational Charting products.	AHO	No further action. Include in ongoing consultation.
	24-Oct-24 Email	SENT	Follow up email sent to other AHO emails.	AHO 1	No further action.
Australian Maritime Safety Authority (AMSA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	20-Oct-23 Follow up phone call	CALL PLACED	Confirmed receipt of original email, suggested resending.	N/A	Resend original email.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	24-Oct-23 Email re-issued	SENT	Follow up email sent to relevant person.	AMSA 1	Awaiting response.
	30-Oct-23 Email	RECEIVED	Email received with notification requirements - refer to Assessment of Merit (Table 4-5) for details.	AMSA 1	No further action. Include in ongoing consultation.
DAFF – National Maritime Centre	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	11-Sep-23 Email	RECEIVED	Auto email response confirming receipt, please do not respond, provided two additional contact addresses.	NMC 1	Noted.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	NMC 2	Noted.
	26-June-24 Email	RECEIVED	Auto email response confirming receipt.	NMC 3	Noted.
DAFF – Conveyance Maritime, Marine Pests, Vessels and others	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	DAFF MP	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	DAFF MP	Awaiting response.
	25-Oct-23 Email	RECEIVED	Auto reply email received.	DAFF MP 1	Noted.
	26-Oct-23 Email	RECEIVED	Received EP and have no further comments to provide. Have forwarded email onto marine biosecurity stakeholder in Victoria.	DAFF MP	Noted. No further action. Include in ongoing consultation.
Department of Defence	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	12-Sep-23 Email	RECEIVED	Email stating error in address, corrected details provided, forwarded internally, response promised.	DOD 1	Noted. Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	9-Oct-23 Email	RECEIVED	Response confirming activity is within restricted airspace and advice that unexploded ordinance (UXO) may be present on sea floor, and absolving DoD of any liabilities.	DOD 2	Restricted airspace noted.
	3-July-24 Email	SENT	Email advising than an ROV survey will be undertaken prior to commencement of decommissioning work to ensure any UXO is identified before the work commences.	DOD 3	Awaiting response.
	03-July-24 Email	RECEIVED	Response confirming no other comments, again noting activity is within restricted airspace and communication with Air Force HQ prior to activity commencement.	DOD 3	Air Force HQ will be contacted prior to activity commencement.
	04-July-24 Email	SENT	Acknowledgment email confirming communication with Air Force HQ will occur prior to activity commencement.	DOD 4	No further action. Include in ongoing consultation.
Department of Climate Change, Energy, Environment and Water (DCCEEW) - Marine Parks, Sea Dumping, Water	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	11-Sep-23 Email	RECEIVED	Confirm receipt, will respond ASAP.	DCCEEW 1	Noted. Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery receipt received.	Gen I	Awaiting response.
	25-Oct-23 Email	RECEIVED	Confirm receipt, will respond ASAP.	DCCEEW 2	Noted. Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	04-July-24 Email	RECEIVED	Confirm receipt, has been passed to relevant department for a follow up.	DCCEEW 3	Noted.
Director of National Parks	2-Nov-23 Email Information Flyer.	SENT	Email with information flyer sent to relevant person.	DNP 1	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	2-Nov-23 Email	SENT	Follow up email resent to correct address.	DNP 2	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response.
	26-June-24 Email	RECEIVED	Delivery receipt.	DNP 3	Noted.
	11-July-24 Email	SENT	Further follow up email sent to additional email address advising of closing date for consultation prior to re-submitting EP to NOPSEMA.	DNP 4	Awaiting response.
	11-July-24 Email	RECEIVED	Delivery Receipt.	DNP 5	Noted.
	11-July-24 Email	RECEIVED	Response confirming that there are no authorisation requirements from DNP. No further notification of progress required unless changes to the activity. Provision of relevant guidance note details and notification requirements.	DNP 6	EP updated to include notifications.
	11-July-24 Email	SENT	Acknowledgement email.	DNP 6	No further action. Include in ongoing consultation.
Category 2 – Each Department or agency of a State to which the activities to be carried out under the EP may be relevant					
Department of Energy, Environment and Climate Action (DEECA)	25-Oct-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	DEECA 1	Awaiting response.
	26-Oct-23 Email	RECEIVED	Receipt confirmed, notice that enquiry has been referred to a more specialised person within the department.	DEECA 2	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	RECEIVED	Received receipt.	DEECA 3	Noted.
Department of Energy, Environment and Climate Action (DEECA) -Biosecurity and Agriculture Services	26-Oct-23 Email - Information flyer forwarded by email from DAFF	SENT	Email with information flyer sent to relevant person.	MPSC 1	Awaiting response.
	26-Oct-23 Email	RECEIVED	Email received – questions relating to vessel to be used in relation to biofouling, request for conversation.	MPSC 1	Noted. Follow up phone call
	30-Oct-23 Phone call	CALL PLACED	Phone call to discuss vessel related questions and confirm vessel would be chartered locally (not imported) and operate from Barry Beach.	N/A	No further action. Include in ongoing consultation.
Maritime Victoria – DEECA	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen H	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
EPA Victoria	15-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	15-Sep-23 Email	RECEIVED	Auto response email.	EPA Vic 1	Noted.
	16-Sep-23 Email	RECEIVED	Receipt confirmed and that correspondence forwarded to South Metro team.	EPA Vic 2	Noted. Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	RECEIVED	Delivery receipt.	EPA Vic 3	Noted.
	26-June-24 Email	RECEIVED	Auto Response email.	EPA Vic 4	Noted.
	01-July-24 Email	RECEIVED	Response asking for elaboration on the work and what seeking from EPA.	EPA Vic 5	Awaiting response.
	01-July-24 Email	SENT	Email sent describing the project.	EPA Vic 5	Awaiting response.
	02-July-24 Email	RECEIVED	Email asking for further detail as to why the EPA were being contacted.	EPA Vic 5	Awaiting response.
	02-July-24 Email	SENT	Email providing further information on project.	EPA Vic 5	Awaiting response.
	8-July-24 Email	RECEIVED	Works are in international waters, therefore will not involve EPA Victoria. No further information required, however happy to receive notifications.	EPA Vic 5	Noted.
	8-July-24 Email	SENT	Email sent explaining well recovery process.	EPA Vic 5	Awaiting response.
	8-July-24 Email	RECEIVED	If bringing into Victorian Waters or onshore, need to apply for appropriate permissions and adhere to Acts and regulations.	EPA Vic 5	Noted.
	9-July-24 Email	SENT	Will ensure meet requirements.	EPA Vic 5	No further action. Include in ongoing consultation.
Transport Safety Victoria – Maritime Safety	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen C	Awaiting response.
	11-Sep-23 Email	RECEIVED	Auto response email.	STV 1	Noted. Awaiting response.
	25-Oct-23 Phone call	CALL PLACED	Confirmed changes in emails, new dept Safe Transport Vic.	N/A	Noted. Email to be resent.
	25-Oct-23 Email - Resent information Flyer	SENT	Follow up email sent to relevant person.	STV 2	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Received receipt	STV 3	Noted.
Parks Victoria	15-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	GEN C	Awaiting response.
	15-Sep-23 Email	RECEIVED	Receipt confirmed and will action or forward to appropriate team.	PV 1	Noted. Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	All	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	PV 2	Noted.
	26-June-24 Email	RECEIVED	Auto Response received.	PV 3	Noted.
Victoria Fishing Authority (VFA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen C Gen D	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	VFA 1	Awaiting response.
	2-Nov-23 Email	RECEIVED	Response – VFA has no comments, please seek comment from SIV, VRFish, Abalone Council, Rock Lobster Advisory group.	VFA 1	Noted. Bodies already in consultation, forwarded flyer to Rock Lobster Group. No restrictions on field following decommissioning
	2-Nov-23 Email	SENT	Email forward to other VFA contact suggested.	VFA 2	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	2-Nov-23 Email	RECEIVED	Further email received wanting to understand if commercial and recreational fishing will be permitted in decommissioned fields.	VFA 3	Awaiting response.
	2-Nov-23 Email	SENT	Email sent advising of 300m exclusion zone around well but no other restrictions in field.	VFA 2	Response provided.
	2-Nov-23 Email	RECEIVED	Acknowledgement email.	VFA 3	Noted.
	2-Nov-23 Email	SENT	Email forwarded on, out of office received from other address.	VFA 4	Awaiting response.
	8-Nov-23 Email	RECEIVED	Request confirmation that this has been passed on to SIV and VRFish as previously requested.	VFA 4	Awaiting response.
	03-July-24 Email	SENT	Email sent to confirm VR Fish and SIV had been contacted.	VFA 5	No further action. Include in ongoing consultation.
	03-July-24 Email	RECEIVED	Delivery receipt.	VFA 6	Noted.
Category 3 – The Department of the responsible State Minister					
DEECA - Earth Resources Regulation (ERR)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery and read receipts received.	Gen J	Awaiting response.
	26-Oct-24 Email	RECEIVED	Email advising ERR will not make any comments.	ERR	Noted. No further action. Include in ongoing consultation.
	2-Nov-23 Email	RECEIVED	Acknowledged receipt and confirmed Victorian regulator for petroleum activities in Victorian waters has no comments. Recommendation to contact Planning and approvals within DEECA.	ERR 1	Noted. CHPL to contact DEECA Planning and Approvals. No further action. Include in ongoing consultation.
DEECA – Planning and Approvals, Gippsland Region	2-Nov-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	DEECA PA 1	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	3-Nov-23 Email	RECEIVED	Acknowledged receipt and that WSH-3 lies outside Victorian waters, however requested a copy of the revised EP to confirm Vic coast impacts are addressed.	DEECA PA 1	Noted. DECCA will be sent copy of EP. Included in Table 4.3.
	3-Nov-23 Email	SENT	Confirm EP will be placed on NOPSEMA website for review, and promised to email a copy separately.	DEECA PA 1	No further action. Include in ongoing consultation.
Category 4 – A person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP					
3D Oil Limited (VIC/P57)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen B	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery and read receipts received.	Gen K	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt	3DO	No further action. Include in ongoing consultation.
CarbonNet (DEECA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen B	Awaiting response.
	11-Oct-23 Email	RECEIVED	Confirmed receipt, outlined CarbonNet Project Plans, identified interest in risk assessment of activities in adjacent tenements, and the timing in relation to potential concurrent works and their impact. Requested a copy of revised EP.	CN	Noted. DECCA will be sent copy of EP. Included in Table 4.3.
	31-Oct-23 Phone call	CALL PLACED	Phone discussion to explore risks with concurrent operations, potential for shared resources, agreed to remain in ongoing communication and confirmed will review EP once published for public comment.	N/A	No further action. Include in ongoing consultation.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
ExxonMobil (Esso Australia Resources Pty Ltd)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen B	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Read receipt received.	Gen K	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt.	EM	Noted.
Commonwealth Fisheries Association (CFA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery receipt received.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation. Looks like their website is no longer available.
	26-June-24 Email	RECEIVED	Delivery Receipt.	CFA 1	Noted.
Australian Southern Bluefin Tuna Industry Association (ASBTIA) – contact 1,2	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery receipt received.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	27-June-24 Email	RECEIVED	Delivery Receipt	ASBTIA 2	No further action. Include in ongoing consultation.
Australian Southern Bluefin Tuna Industry Association (ASBTIA) – contact 3	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	12-Sep-23 Email	RECEIVED	Error message.	Gen L	Noted. Look for alternative contact.
	26 Oct, 30 Oct & 31-Oct-23 Phone calls	CALLS PLACED	Phoned and left messages to contact.	N/A	Awaiting return phone call.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to new address and enquiry via website. Delivery receipt from website.	Gen P	Awaiting response.
	31-Oct-23 Email	RECEIVED	Auto Response notification, email received.	ASBTIA 1	Noted.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response.
	27-June-24 Email	RECEIVED	Delivery receipt.	ASBTIA 2	Noted.
	28-June-24 Email	RECEIVED	Email received providing correct contact details for ASBTIA.	ASBTIA 3	Noted.
	01-July-2024 Email	SENT	Acknowledgement email and forwarded email on to correct recipient.	ASBTIA 3	Awaiting response.
	03-July-2024 Email	RECEIVED	Acknowledgment email. No concerns based on information provided, please keep updated if change to activity.	ASBTIA 3	No further action. Include in ongoing consultation.
Bass Strait Central Zone Scallop Fishery	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen L	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response.
	26-June-24 Email	RECEIVED	Email delivered.	BSCZSF 1	No further action. Include in ongoing consultation.
Eastern Zone Abalone Industry Association	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery receipt received.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt.	EZAIA 1	Noted.
	26-June-24 Email	RECEIVED	Read Receipt.	EZAIA 2	Noted.
Seafood Industry Victoria (SIV)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	28-Sep-23 Email	RECEIVED	Email received.	SIV 1	SIV have requested for details of correspondence to remain confidential. Further details of consultation provided in Sensitive Information Report.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	SIV 2	Awaiting response.
	31-Oct-23 Email	RECEIVED	Confirmation email received.	SIV 3	Noted.
	30-Jan-24 Email	RECEIVED	Request for confidentiality.	SIV 4	Noted.
	31-Jan-24 Email	RECEIVED	Request for confidentiality.	SIV 4	Noted.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	31-Jan-24 Phone call	CALL PLACED	No information on call.	N/A	N/A
	01-Feb-24 Email	SENT	Email sent.	SIV 5	N/A
	01-Feb-24 Email	RECEIVED	Email received.	SIV 5	N/A
	03-July-24 Email	SENT	Further follow up email.	SIV 6	Awaiting response.
	05-July-24 Email	RECEIVED	Email received.	SIV 6	CHPL to respond.
South-East Trawl Fishing Industry Association (SETFIA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to Relevant Person. Delivery and Read receipts confirmed.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response.
	26-June-24 Email	RECEIVED	Delivery receipt.	SETFIA 1	Noted.
	26-June-24 Email	RECEIVED	Out of office email.	SETFIA 2	Noted.
	27-June-24 Email	RECEIVED	Read receipt.	SETFIA 3	Noted.
	27-June-24 Email	RECEIVED	Email asking how long the wells will be in non production and plans for decommissioning.	SETFIA 4	Awaiting response.
	27-June-24 Email	SENT	Response sent answering questions.	SETFIA 4	Awaiting response.
	27-June-24 Email	RECEIVED	Acknowledgement email.	SETFIA 4	Noted. No further action. Include in ongoing consultation.
Southern Shark Industry Alliance (SSIA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	10-Oct-23 Email	RECEIVED	Response from AFMA with different email address.	AFMA	Noted. Email sent to updated contact.
	12-Oct-23 Email	SENT	Emailed with information flyer, email passed on by AFMA.	AFCG	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery and read receipt received.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt	SSIA 1	Noted.
Sustainable Shark Fishing Association (SSFA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery receipt received.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	SENT	Further email sent trying to find SSFA contact.	SSFA 1	Awaiting response.
	01-July-2024 Email	RECEIVED	Confirmed that SSFA does not exist, they closed a few years ago.	SSFA 1	No further action.
	01-July-2024 Email	SENT	Acknowledgement email.	SSFA 1	Noted.
Tuna Australia	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery receipt received.	Gen L	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response
	26-June-24 Email	RECEIVED	Delivery receipt.	TA 1	Noted.
	26-June-24 Email	RECEIVED	Read receipt.	TA 2	Noted.
	27-June-24 Email	RECEIVED	Tuna Australia sent through industry position statement on how it engages with the oil and gas sector.	TA 3	Noted. CHPL to review position statement.
	04-July-24 Email	SENT	Request for consultation agreement and cost.	TA 4	Awaiting response.
	04-July-24 Email	RECEIVED	Copy of the Service Agreement sent through.	TA 4	Services Agreement being reviewed by CPHL.
Victorian Abalone Divers Association (VADA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery failed.	Gen L	Search for updated contact details.
	25-Oct-23 Email - resent information flyer	SENT	Resent email to new address.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation. Email failed. Searched online and cannot find any information on the organisation - found WADA which may be what this became part of.	ALL	Confirm organisation no longer exists.
	27-28-June-24 Email	RECEIVED	Delivery failure notifications.	VADA 1 and 2	Noted.
	27-June-24 Email	SENT	Further follow up email.	VADA 3	Awaiting response.
	2-July-24 Email	SENT	Email to Abalone Council Victoria trying to get in touch with VADA.	VADA 4	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	2-July-24 Email	RECEIVED	Email from ACV confirming VADA no longer in operation. ACV are peak body representing wild harvest abalone industry in Victoria now.	VADA 4	Noted.
	03-July-24 Email	SENT	Acknowledgement email.	VADA 4	No further action.
Abalone Council Victoria	2-Jul-24 Email	SENT	On advice of VADA contacted ACV and sent information.	VADA 4	Contacted on advice of previous VADA contact.
	2-Jul-24 Email	RECEIVED	Delivery Receipt.	ACV 1	N/A
	2-Jul-24 Email	SENT	Email advising VADA are no longer in operation, ACV are peak body representing the wild harvest abalone industry in Victoria. Will review and respond.	ACV 2	No further action. Include in ongoing consultation.
Victoria Recreational Fishing (VRFish)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response.
	9-July-24 Email	SENT	Further follow up email sent.	VRF 1	Awaiting response.
	11-July-24 Email	SENT	Follow up email sent - new email address found for organisation.	VRF 1	Awaiting response.
	11-July-24 Email	RECEIVED	Delivery Receipt.	VRF 2	Noted.
	11-July-24 Email	RECEIVED	Automated out of office response received.	VRF 3	Noted.
	15-July-24 Email	RECEIVED	Read Receipt.	VRF 4	Noted.
	15-July-24 Email	RECEIVED	Response from VRFish confirm receipt and forwarding email to relevant person.	VRF 5	Noted. No further action. Include in ongoing consultation.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
Victorian Scallop Fisherman's Association (VSFA)	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen D	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen L	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt	VSFA 1	Noted.
	26-June-24 Email	RECEIVED	Delivery receipt	VSFA 2	Noted.
First Nations Persons					
Gunaikurnai Land and Waters Aboriginal Corporation	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen G	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen N	Awaiting response.
	27-Oct-23 Phone call	CALL PLACED	Phone call - closed for NAIDOC week.	N/A	Resend information flyer.
	27-Oct-23 Email - resent information flyer	SENT	Further follow up email sent to relevant person. Delivery and read receipt received.	GLWAC	Awaiting response.
	13-Nov-23 Phone call	CALL PLACED	Stated waiting on internal responses but did not believe they will have any objections	N/A	Noted.
	15/19/21-Jan-24 Phone calls	CALLS PLACED	Promised to pass message to CEO to return call.	N/A	Awaiting return phone call.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	22-Jan-24 Call received	CALL RECEIVED	CEO returned call, brief discussion relating to project and response. Area of operations lies outside the Gunaikurnai Settlement Area meaning GLAWAC has no Native Title rights over the operations area. Stated the people retain a strong interest and will continue to advocate for the health of land and sea country. Raised expectation that all genuine efforts are made to manage and protect cultural heritage and Country, and that they look forward to staying up to date as the project progresses.	N/A	Noted. Table 4.3 "Standard Consultation Actions" added to EP and includes a line item "Notification of project updates to GLAWAC as required". No further action. Include in ongoing consultation.
Koorie Heritage Trust	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen G	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen N	Awaiting response.
	26-Oct-23 Phone call	CALL PLACED	Phone call - email not received – requested resend – promised to respond if warranted.	N/A	Resend information flyer.
	27-Oct-23 Email - further follow up email with information flyer	SENT	Follow up email sent to relevant person. Delivery receipt received.	KHT	Noted. No further action. Include in ongoing consultation.
Aboriginal and Torres Strait Islands - DCCEEW	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen G	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen N	Awaiting response.
	27-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery receipt received.	Gen O	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	ATSIHPA	Noted.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
Australian Heritage Council - DCCEEW	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen G	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen N	Awaiting response.
	27-Oct-23 Email - delivery receipt	RECEIVED	Delivery receipt.	Gen O	Noted. Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	ATSIHPA	Noted.
Category 5 – Any other person or organisation that the Titleholder considers relevant					
Atoll Offshore	16-Sep-23 Phone call	CALL PLACED	Phoned and left a message to contact.	N/A	Awaiting response.
	31-Oct-23 Phone call	CALL PLACED	Phoned and left a message to contact.	N/A	Awaiting response.
	26-June-24	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-Jun-24	RECEIVED	Email failed to deliver.	N/A	Noted.
	26-Jun-24	SENT	Enquiry sent to company who handles emails for Atoll Offshore. Request for contact has been forwarded.	Atoll	Noted.
Australian Oceanographic Services	15-Sep-23 Webform	FORM SENT	Sent enquiry via website to obtain contact details.	N/A	Awaiting response.
	15-Oct-23 Webform	FORM SENT	Sent enquiry via website to obtain contact details.	N/A	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-Jun-24	RECEIVED	Email failed to deliver.	AOS	Noted.
	26-June-24 Webform	FORM SENT	Sent enquiry via website to obtain contact details.	N/A	No further action. Include in ongoing consultation.
Australian Wildcatch Fishing	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Phone call	CALL PLACED	Advised CEO will be asked to respond, but noted that normally grouped with SETFIA in any communications.	N/A	Noted.
	1-Nov-23 Email	RECEIVED	Email received advising that consult via SETFIA.	AWF	No further action required. SETFIA already contacted as a Relevant Person. Include in ongoing consultation.
Bass Strait Game Fishing Club	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Phone call	CALL PLACED	Confirmed receipt and no intention to respond.	N/A	Noted. No further action. Include in ongoing consultation.
Bass Strait Bait and Tackle Lakes Entrance	16-Sep-23 Phone call	CALL PLACED	Owner advised not directly affected but would support infrastructure remaining in place.	N/A	Noted.
	28-June-24 Phone call	CALL PLACED	Phoned and left a message to contact.	N/A	Awaiting response.
	01-Jul-24 Phone call	CALL PLACED	Phoned and left a message to contact.	N/A	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	3-Jul-24 Messaged on Facebook site	Message sent	Left message requesting contact.	N/A	No further action. Include in ongoing consultation.
Boating Industry of Victoria	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Phone call	CALL PLACED	Confirmed receipt of email and no impact on BIAVic and no intent for further comments.	N/A	Noted. No further action. Include in ongoing consultation.
Committee for Gippsland	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Phone call	CALL PLACED	Phoned and left a message to contact.	N/A	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	CFG 1	Noted.
	28-June-24 Email	RECEIVED	Acknowledgement email. Would like to set up meeting to discuss project.	CFG 2	CHPL to set up meeting.
	28-June-24 Email	SENT	Offered to discuss with CFG whenever they had time.	CFG 2	Awaiting response.
	8-July-24 Email	SENT	Follow up email to arrange time for meeting.	CFG 3	Awaiting response.
	10-July-24 Email	RECEIVED	Acknowledgement email. Meeting to be set up for 15th July.	CFG 3	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	10-July-24 Email	SENT	Email setting up meeting time and date.	CFG 3	Awaiting response.
Corner Inlet Fisheries Habitat Association	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Phone call	CALL PLACED	Phoned and left a message to contact.	N/A	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Contact form	SENT	Sent message on website contact section - https://www.cifha.com.au/contact/	N/A	No further action.
	08-July-24 Contact form	SENT	Sent message on website contact section - https://www.cifha.com.au/contact/	N/A	No further action.
East Gippsland Shire Council	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	16-Sep-23 Email	RECEIVED	Auto email response, aim to respond within 10 days.	EGSC 1	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Auto email response.	EGSC 2	Noted.
	26-June-24 Email	RECEIVED	Delivery receipt.	EGSC 3	Noted.
	26-June-24 Email	RECEIVED	Read receipt.	EGSC 4	Noted.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
Farout Charters	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	17-Sep-23 Email	RECEIVED	Advised via email currently working in area, understands PSZ impact, no further issues. Offer to provide vessel support if required.	FF	Noted. No further action. Include in ongoing consultation.
Game Fishing Association of Victoria	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	18-Sep-23 Phone call	CALL PLACED	Promised to distribute to others in the area.	N/A	Noted.
	31-Oct-23 Phone call	CALL PLACED	Advised new email address.	N/A	Noted. Resend email to updated address.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person. Delivery and read receipts received.	GFAV	No further action. Include in ongoing consultation.
Gippsland Lakes Fishing Club	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Phone call	CALL PLACED	Asked to resend email, promised to distribute to all members.	N/A	Noted. Resend email to updated address.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	GLFC 1	Awaiting response.
	31-Oct-23 Email	RECEIVED	Email to confirm receipt and will distribute to all members.	GLFC 1	Noted. No further action. Include in ongoing consultation.
	6-Nov-23 Email	RECEIVED	Email to confirm email forwarded to all members.	GLFC 2	Noted.
Lake Tyers Beach Angling Club	18-Sep-23 Phone call	CALL PLACED	Phoned and left a message to contact.	N/A	Awaiting response.
	31-Oct-23 Phone call	CALL PLACED	Phoned and left a message to contact.	N/A	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24	N/A	Searching for updated contact details. Appears club is permanently closed.	N/A	No further action.
Lake Entrance Fishermen's Co-operative	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	LEFCOL 2	Noted.
	26-June-24 Email	RECEIVED	Read receipt received.	LEFCOL 2	Noted.
Lakes Entrance Visitor Information Centre	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	RECEIVED	Delivery Receipt.	LEVIC	No further action. Include in ongoing consultation.
Life Saving Victoria	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	1-Nov-23 Email	RECEIVED	Delivery confirmed, forwarded to appropriate team and will respond shortly.	LSV	Noted. No further action. Include in ongoing consultation.
Maritime Industry Australia Ltd	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	20-Sep-23 Email	RECEIVED	Confirmed receipt and will redistribute to all members.	MIAL 1	Noted.
	21-Sep-23 Email	SENT	Confirmed consultation is still open and best contact via details on flyer.	MIAL 1	Awaiting response.
	25-Sep-23 Email	RECEIVED	Acknowledgement email confirming redistribution.	MIAL 1	Noted. No further action. Include in ongoing consultation.
Mitchelson Fisheries Pty Ltd	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	27-June-24 Email	RECEIVED	Email received saying still interested.	MF	Noted. Include in ongoing consultation.
Mornington Peninsula Shire	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt.	MPS 1	Noted.
	26-June-24 Email	RECEIVED	Automatic response.	MPS 2	Noted.
Panama II fishing vessel	16-Sep-23 Phone call	CALL PLACED	Advised as members of Lakes Entrance Fisherman's Co-op and will respond via them.	N/A	Lakes Entrance Fishermen's Co-op already a relevant person. No further action. Include in ongoing consultation.
Piscari Industries Pty Ltd	24-Sep-23 Phone call	CALL PLACED	Owner advised they are outside of EMBA and will not be impacted.	N/A	No further action. Include in ongoing consultation.
Port of Hastings	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response.
	26-June-24 Email	RECEIVED	Delivery receipt.	POH 1	Noted.
	26-June-24 Email	RECEIVED	Read receipt.	POH 2	Noted.
	28-June-24 Email	RECEIVED	Acknowledgement of receipt - will respond if have any questions.	POH 3	Noted. No further action. Include in ongoing consultation.
South Gippsland Game Fishing Club	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	31-Oct-23 Email	RECEIVED	Email to confirm receipt and they are part of GFA Victoria, and stance is to leave infrastructure in place.	SGGFC 1	Awaiting response.
	29-May-24 Email	SENT	Email explaining requirement to remove wellheads.	SGGFC 2	Awaiting response.
	01-July-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA and asking for confirmation if follow up question answered.	SGGFC 3	No further action.
South Gippsland Shire Council	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	16-Sep-23 Email	RECEIVED	Auto response.	SGSC 1	Noted.
	19-Sep-23 Email	RECEIVED	Email confirming receipt and that information flyer has been distributed to relevant staff within organisation.	SGSC 2	Noted. No further action. Include in ongoing consultation.
Victoria Game Fishing Club	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt.	VGFC	Noted.
Victoria Regional Channels Authority	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt.	VRCA	Noted.
Wellington Shire Council	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	16-Sep-23 Email	RECEIVED	Auto response – email will be handled in accordance with Customer Service Commitment.	WSC 1	Awaiting response.
	21-Sep-23 Email	RECEIVED	Email acknowledging receipt and no intent to provide further comment.	WSC 2	No further action. Include in ongoing consultation.
Yachting Victoria	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	YV 1	Awaiting response.
	27-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	YV 2	No further action. Include in ongoing consultation.
	26--27-June-24 Email	RECEIVED	Variety of delivery Receipts	YV 3 - YV 8	Noted.
Woodside Beach SLSC	2-Nov-23 Email Information Flyer	SENT	Email with information flyer forwarded from Life Saving Victoria.	WBSLSC	Awaiting response.
	14-Nov-23 Email	RECEIVED	Email asking about potential risks to Woodside Beach and mitigations.	WBSLSC	Awaiting response.
	14-Nov-23 Email	SENT	Email to advise potential risks around MDO spill.	WBSLSC	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	14-Nov-23 Email	RECEIVED	Thanked for response, will discuss internally and respond further.	WBSLSC	Noted. No further action. Include in ongoing consultation.
Australian Wildlife Conservancy	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	20-Sep-23 Email	RECEIVED	Confirmed email receipt, but does not believe AWC would be considered a relevant stakeholder.	AWC	Noted. No further action.
Bush Heritage	16-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	01-Nov-23 Email	RECEIVED	Acknowledged receipt and will not be commenting.	BHF	Noted. No further action. Include in ongoing consultation.
Community Over Mining	15-Sep-23 Webform	SENT	Message via website requesting contact details.	N/A	Awaiting response.
	31-Oct-23 Webform	SENT	Repeated request via website for contact details.	N/A	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	Awaiting response.
	26-June-24 Email	RECEIVED	Delivery receipt.	COM 1	Noted.
	27-June-24 Email	RECEIVED	Acknowledgement email. Will read up on proposal.	COM 2	Awaiting response.
	27-June-24 Email	SENT	Acknowledgement email.	COM 2	N/A
	15-July-24 Email	RECEIVED	Email received with comments for review. Concerns around potential for leakage pathways, seabed disturbance and crowding of proposed ESSO decommissioning.	COM 2	CHPL to review and respond.
	17-July-24 Email	SENT	Email sent providing reply to comments.	COM 2	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	17-July-24 Email	RECEIVED	Acknowledgment of receipt. Happy with responses.	COM 2	No further action. Include in ongoing consultation.
Extinction Rebellion	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen M	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	ER	Noted.
Friends of the Earth Australia	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen M	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	FOE	Noted.
Greenpeace	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	19-Sep-23 Email- auto response	RECEIVED	Auto response – received enquiry and will respond ASAP.	GP 1	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen M	Awaiting response.
	25-Oct-23 Email- auto response	RECEIVED	Auto response – received enquiry and will respond ASAP.	GP 2	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-Jun-24 Email	RECEIVED	Delivery receipt.	GP 3	Noted.
	26-June-24 Email - auto response	RECEIVED	Auto response – received enquiry and will respond ASAP.	GP 4	Noted.
The Nature Conservancy	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen M	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt.	TNC	No further action. Include in ongoing consultation.
The Wilderness Society	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen M	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	WS	Noted.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	4-July-24 Email	RECEIVED	Email received requesting additional information about planned activities.	WS 1	Awaiting response
	8-July-24 Email	SENT	Email confirming receipt of previous email sent explaining work to be carried out.	WS 2	Awaiting response.
	8-July-24 Email	RECEIVED	Delivery Receipt.	WS 3	Noted.
	8-July-24 Email	RECEIVED	Confirmation of email received. Unlikely to have more comments or that The Wilderness Society will comment.	WS 4	Noted.
	9-July-24 Email	SENT	Follow up email to acknowledge receipt.	WS 5	Wait for response
	11-July-24 Email	RECEIVED	Happy with the information provided. Two follow up questions sent through.	WS 6	CHPL to provide responses to questions.
	17-July-24 Email	SENT	Answers to questions provided.	WS 6	No further action.
Trust for Nature	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen M	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	TFN 1	Noted.
	26-June-24 Email	RECEIVED	Read Receipt.	TFN 2	Noted.
Wildlife Victoria	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen M	Awaiting response.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt	WV 1	No further action. Include in ongoing consultation.
World Wildlife Fund for Nature	19-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen F	Awaiting response.
	25-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen M	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery Receipt.	WWF 1	Noted.
	26-June-24 Email	RECEIVED	Auto response email.	WWF 2	Noted.
Other*					
Atlantis Fisheries Consultation Group	12-Oct-23 Email	SENT	Emailed with information flyer, email passed on by AFMA.	AFCG	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	AFCG 1	Noted.
	27-June-24 Email	RECEIVED	Email deleted without being read.	AFCG 2	Noted.

Relevant Person	Date and Method of Consultation	To/from	Summary of content	Reference ID	Action undertaken/ status
Lakes Entrance Fishermens Cooperative	15-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen E	Awaiting response.
	31-Oct-23 Email - resent information flyer	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	26-June-24 Email	SENT	Further follow up email sent advising of closing date for consultation prior to re-submitting EP to NOPSEMA, that our records indicate despite past efforts we have not received a response, and this is final attempt to elicit a response before re-submitting EP.	ALL	No further action. Include in ongoing consultation.
	26-June-24 Email	RECEIVED	Delivery receipt.	LEFCOL 1	Noted.
	26-June-24 Email	RECEIVED	Read receipt.	LEFCOL 2	Noted.
Ports Victoria	31-Oct-23 Email	SENT	Follow up email sent to relevant person.	Gen Q	Awaiting response.
	1-Nov-23 Email	RECEIVED	Acknowledgement email and has been passed onto appropriate person to action.	PoV 1	Awaiting response.
	1-Nov-23 Email	RECEIVED	Confirm receipt and will assess to what extent may comment.	PoV 2	Awaiting response.
	1-Nov-23 Email	RECEIVED	No direct comment as outside Victorian coastal waters. Provided details for appropriate state agencies that should be contacted in regards to marine pollution and emergency response.	PoV 2	Noted. These agencies are listed within the OPEP for notifications. No further action. Include in ongoing consultation.
Department of Infrastructure, Transport, Regional Development, Communications and the Arts	11-Sep-23 Email Information Flyer	SENT	Email with information flyer sent to relevant person.	Gen A	Awaiting response.
	25-Oct-23 Email - Resent information Flyer	SENT	Follow up email sent to Relevant Person. Delivery and Read receipts confirmed.	DOIT 1	Awaiting response.
	25-Oct-23 Email	RECEIVED	Auto email response.	DOIT 2	No further action. Include in ongoing consultation.

* In the course of consulting with current relevant persons the following stakeholders were referred or suggested for consultation.

Appendix 3 PROTECTED MATTERS REPORTS

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 17-Jul-2024

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:	37
Listed Migratory Species:	35

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:	60
Whales and Other Cetaceans:	10
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	9
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)

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		
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	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
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
FISH		
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
MAMMAL		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
[Ardenna carneipes](#) Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
[Ardenna grisea](#) Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
[Diomedea antipodensis](#) Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Diomedea epomophora](#) Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Diomedea exulans](#) Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Diomedea sanfordi](#) Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
[Macronectes giganteus](#) Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
[Macronectes halli](#) Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phoebetria fusca		
Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri		
Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri		
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta		
Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma		
Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Migratory Marine Species		
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Migratory Wetlands Species

Scientific Name	Threatened Category	Presence Text
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
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
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
[Diomedea antipodensis](#) Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Diomedea antipodensis gibsoni as Diomedea gibsoni](#) Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Diomedea epomophora](#) Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Diomedea exulans](#) Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Diomedea sanfordi](#) Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
[Halobaena caerulea](#) Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Fish		
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus minotaur Bullneck Seahorse [66705]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Arctocephalus pusillus](#) Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Reptile		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
[Balaenoptera acutorostrata](#) Minke Whale [33]		Species or species habitat may occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
2004/2005 drilling program for exploration and production (VIC 01-06, 09-11, 16, 18 & 19 and VIC/RL	2003/1282	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed
Not controlled action (particular manner)			
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular Manner)	Post-Approval

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		

Scientific Name	Behaviour	Presence
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur
Sharks		
Carcharodon carcharias White Shark [64470]	Breeding (nursery area)	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present

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.

Department of Climate Change, Energy, the Environment and Water
GPO Box 3090
Canberra ACT 2601 Australia
+61 2 6274 1111

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: 01-Jul-2024

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	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	9
Listed Threatened Species:	123
Listed Migratory Species:	78

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:	118
Whales and Other Cetaceans:	30
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	39
Regional Forest Agreements:	3
Nationally Important Wetlands:	14
EPBC Act Referrals:	76
Key Ecological Features (Marine):	1
Biologically Important Areas:	19
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Corner inlet	Within Ramsar site
Gippsland lakes	Within Ramsar site

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Brogo Vine Forest of the South East Corner Bioregion	Endangered	Community may occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana) Grassy Woodland and Associated Native Grassland	Critically Endangered	Community likely to occur within area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area
Lowland Grassy Woodland in the South East Corner Bioregion	Critically Endangered	Community may occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community likely to occur within area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	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
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat known to occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	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
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thinornis cucullatus cucullatus		
Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area
CRUSTACEAN		
Euastacus bidawalus		
Bidhawal Crayfish, Bidawal Crayfish, East Gippsland Spiny Crayfish [83136]	Endangered	Species or species habitat known to occur within area
Euastacus diversus		
Orbost Spiny Crayfish [66782]	Endangered	Species or species habitat may occur within area
FISH		
Epinephelus daemelii		
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area
Galaxiella pusilla		
Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Endangered	Species or species habitat known to occur within area
Hoplostethus atlanticus		
Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
Prototroctes maraena		
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
Rexea solandri (eastern Australian population)		
Eastern Gemfish [76339]	Conservation Dependent	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Seriolella brama		
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
Thunnus maccoyii		
Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
Heleioporus australiacus		
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
Litoria aurea		
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria raniformis		
Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
Litoria watsoni		
Southern Heath Frog, Watson's Tree Frog [91509]	Endangered	Species or species habitat likely to occur within area
Uperoleia martini		
Martin's Toadlet [1873]	Endangered	Species or species habitat known to occur within area
MAMMAL		
Antechinus minimus maritimus		
Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat known to occur within area
Balaenoptera borealis		
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera physalus		
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus		
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area
Mastacomys fuscus mordicus		
Broad-toothed Rat (mainland), Tooarrana [87617]	Endangered	Species or species habitat may occur within area
Petauroides volans		
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area
Potorous longipes		
Long-footed Potoroo [217]	Endangered	Species or species habitat known to occur within area
Potorous tridactylus trisulcatus		
Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat known to occur within area
Pseudomys fumeus		
Smoky Mouse, Konoom [88]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Pseudomys novaehollandiae](#) New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area
[Pteropus poliocephalus](#) Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
PLANT		
[Acacia caerulescens](#) Limestone Blue Wattle, Buchan Blue, Buchan Blue Wattle [21883]	Vulnerable	Species or species habitat known to occur within area
[Acacia lanigera var. gracilipes](#) [31652]	Endangered	Species or species habitat may occur within area
[Amphibromus fluitans](#) River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat likely to occur within area
[Astrotricha sp. Wingan Inlet (J.A.Jeanes 2268)](#) Wingan Star-hair [85675]	Endangered	Species or species habitat known to occur within area
[Caladenia orientalis](#) Eastern Spider Orchid [83410]	Endangered	Species or species habitat likely to occur within area
[Caladenia tessellata](#) Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat known to occur within area
[Calochilus pulchellus](#) Pretty Beard Orchid, Pretty Beard-orchid [84677]	Endangered	Species or species habitat may occur within area
[Commersonia prostrata](#) Dwarf Kerrawang [87152]	Endangered	Species or species habitat known to occur within area
[Cryptostylis hunteriana](#) Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Deyeuxia ramosa Climbing Bent-grass [87970]	Critically Endangered	Species or species habitat likely to occur within area
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat known to occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat may occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat likely to occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Pomaderris parrisiae Parris' Pomaderris [22119]	Vulnerable	Species or species habitat likely to occur within area
Prasophyllum frenchii Maroon Leek-orchid, Slaty Leek-orchid, Stout Leek-orchid, French's Leek-orchid, Swamp Leek-orchid [9704]	Endangered	Species or species habitat known to occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat likely to occur within area
Prostanthera galbraithiae Wellington Mintbush [64959]	Vulnerable	Species or species habitat known to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat likely to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat known to occur within area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Lissolepis coventryi		
Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
SHARK		
Carcharias taurus (east coast population)		
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat may occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Centrophorus harrissoni		
Harrisson's Dogfish, Endeavour Dogfish, Dumb Gulper Shark, Harrison's Deepsea Dogfish [68444]	Conservation Dependent	Species or species habitat likely to occur within area
Centrophorus uyato		
Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Galeorhinus galeus		
School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat likely to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Migratory Marine Species		
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat known to occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
[Calidris alba](#) Sanderling [875]		Roosting known to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area
[Calidris pugnax as Philomachus pugnax](#) Ruff [91256]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Unknown	
Commonwealth Land - [21496]	VIC

Commonwealth Land Name	State
Commonwealth Land - [21498]	VIC
Commonwealth Land - [21497]	VIC

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Gabo Island Lighthouse	VIC	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
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area
Ardenna tenuirostris as Puffinus tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area
Charadrius bicinctus Double-banded Plover [895]		Roosting 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 mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Breeding known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	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
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area
Numenius phaeopus Whimbrel [849]		Roosting 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
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area overfly marine area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Breeding known to occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding known to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area overfly marine area
Fish		
[Heraldia nocturna](#) Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
[Hippocampus abdominalis](#) Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
[Hippocampus breviceps](#) Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
[Hippocampus minotaur](#) Bullneck Seahorse [66705]		Species or species habitat may occur within area
[Histiogamphelus briggsii](#) Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
[Histiogamphelus cristatus](#) Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
[Hypselognathus rostratus](#) Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
[Kaupus costatus](#) Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
[Kimblaeus bassensis](#) Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Breeding known to occur within area
Reptile		

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to 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
[Tursiops aduncus](#) Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
[Tursiops truncatus s. str.](#) Bottlenose Dolphin [68417]		Species or species habitat may occur within area
[Ziphius cavirostris](#) Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Baawang	Reference Area	VIC
Bancroft Bay - Kalimna G.L.R.	Natural Features Reserve	VIC
Barga	Reference Area	VIC
Baxter Island G.L.R.	Natural Features Reserve	VIC
Bemm, Goolengook, Arte and Errinundra Rivers	Heritage River	VIC
Beware Reef	Marine Sanctuary	VIC
Brodribb River F.F.R	Nature Conservation Reserve	VIC
Cape Conran Coastal Park	Conservation Park	VIC
Cape Howe	Wilderness Zone	VIC
Cape Howe	Marine National Park	VIC
Croajingolong	National Park	VIC
Darriman H29 B.R	Natural Features Reserve	VIC
Entrance Point	Reference Area	VIC
Ewing Morass W.R	Natural Features Reserve	VIC
First and Second Islands F.R.	Nature Conservation Reserve	VIC

Protected Area Name	Reserve Type	State
Flannagan Island G.L.R.	Natural Features Reserve	VIC
Fraser Island G.L.R.	Natural Features Reserve	VIC
Fresh-water Swamp, Woodside Beach W.R	Natural Features Reserve	VIC
Gippsland Lakes Coastal Park	Conservation Park	VIC
Jack Smith Lake W.R	Natural Features Reserve	VIC
Lake Corringle W.R	Natural Features Reserve	VIC
Lake Curlip W.R.	Natural Features Reserve	VIC
Lake Denison W.R	Natural Features Reserve	VIC
Lake Tyers S.P.	State Park	VIC
Mount Vereker Creek	Natural Catchment Area	VIC
Nadgee	Nature Reserve	NSW
Ninety Mile Beach	Marine National Park	VIC
Nooramunga Marine & Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
Nyerimilang Park G.L.R.	Natural Features Reserve	VIC
Point Hicks	Marine National Park	VIC
Rame Head	Remote and Natural Area - Schedule 6, National Parks Act	VIC
Rigby Island G.L.R.	Natural Features Reserve	VIC
Snowy River	Heritage River	VIC
The Lakes	National Park	VIC
William Hunter F.R	Nature Conservation Reserve	VIC
Wilsons Promontory	National Park	VIC

Protected Area Name	Reserve Type	State
Wilsons Promontory	Wilderness Zone	VIC
Wilsons Promontory Islands	Remote and Natural Area - Schedule 6, National Parks Act	VIC
Wilsons Promontory Marine Park	National Parks Act Schedule 4 park or reserve	VIC

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State
East Gippsland RFA	Victoria
Eden RFA	New South Wales
Gippsland RFA	Victoria

Nationally Important Wetlands [Resource Information]

Wetland Name	State
Bemm, Goolengook, Arte and Errinundra Rivers	VIC
Corner Inlet	VIC
Ewing's Marsh (Morass)	VIC
Jack Smith Lake State Game Reserve	VIC
Lake Bunga	VIC
Lake King Wetlands	VIC
Lake Tyers	VIC
Lake Victoria Wetlands	VIC
Lower Snowy River Wetlands System	VIC
Mallacoota Inlet Wetlands	VIC
Snowy River	VIC
Sydenham Inlet Wetlands	VIC
Tamboon Inlet Wetlands	VIC
Thurra River	VIC

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Blue Marlin Offshore Wind Energy Project	2023/09532		Referral Decision
Gippsland Offshore Wind Farm Marine Survey Investigations	2023/09682		Referral Decision
Greater Gippsland Offshore Wind Project	2022/09379		Assessment
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed
Seadragon Offshore Wind, Early Marine Surveys	2023/09670		Completed
Seadragon Offshore Wind Farm	2022/9163		Completed
South East Australia Carbon Capture and Storage Project, Commonwealth waters	2023/09732		Referral Decision
South East Australia Carbon Capture and Storage Project, Onshore and State waters	2023/09731		Referral Decision
Controlled action			
Gippsland Regional Port Project	2020/8667	Controlled Action	Assessment Approach
Golden Beach Gas Project	2019/8513	Controlled Action	Post-Approval
Star of the South Offshore Wind Farm Project	2020/8650	Controlled Action	Guidelines Issued
Thomson River Mercury Recovery Project	2010/5734	Controlled Action	Completed
Not controlled action			
2004/2005 drilling program for exploration and production (VIC 01-06, 09-11, 16, 18 & 19 and VIC/RL	2003/1282	Not Controlled Action	Completed
2D seismic Survey in VIC/P55, VIC/RL2 and VIC/P41	2004/1876	Not Controlled Action	Completed
55m lattice tower & infrastructure	2003/1159	Not Controlled Action	Completed
Acquistion of 2D seismic data in State Waters adjacent to Ninety Mile Beach-VIC/P39(V)	2004/1889	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Angas and Galloway Exploration Wells VIC/P39(v)	2005/2330	Not Controlled Action	Completed
Basker-Manta-Gummy Oil Development	2011/6052	Not Controlled Action	Completed
Basker-Manta-Gummy Oil Field Development	2007/3402	Not Controlled Action	Completed
Basker-Manta Oil Field Development	2005/2026	Not Controlled Action	Completed
Beardie-1 Field wildcat oil well	2001/505	Not Controlled Action	Completed
Biodiversity Impacts Audit	2011/6191	Not Controlled Action	Completed
Construction of an ocean access boat ramp at Bastion Point	2004/1407	Not Controlled Action	Completed
Cunninghame Arm Redevelopment (Stage 3)	2002/618	Not Controlled Action	Completed
Development of Kipper gas field within Vic/L3, Vic/L4 Vic/RL2	2005/2484	Not Controlled Action	Completed
Development of Turrum Oil Field and associated infrastructure	2003/1204	Not Controlled Action	Completed
Drilling and side track completion at Baleen gas production well in Production Licence area VIC/L21	2004/1535	Not Controlled Action	Completed
Drilling of 'Culverin' oil exploration well, permit VIC/P56	2005/2279	Not Controlled Action	Completed
Drilling of Scallop-1 Exploration Well	2003/917	Not Controlled Action	Completed
East Pilchard exploration well	2001/137	Not Controlled Action	Completed
Gippsland Basin Seismic Programme	2004/1866	Not Controlled Action	Completed
Gippsland Lakes Composting Toilet Program	2000/66	Not Controlled Action	Completed
Hemingway1/Oil Exploration	2001/177	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Kipper Tuna Turrum Project Maintenance Dredging	2010/5430	Not Controlled Action	Completed
Longtom-3 Gas Appraisal Well, VIC/P54	2005/2494	Not Controlled Action	Completed
Longtom Gas Pipeline Development, VIC/P54	2006/3072	Not Controlled Action	Completed
Marlin-Snapper Gas Pipeline Project	2006/3197	Not Controlled Action	Completed
Melville 1 Oil Exploration Well	2001/167	Not Controlled Action	Completed
Northright-1 Exploration Well	2001/209	Not Controlled Action	Completed
Offshore Petroleum Exploration	2001/289	Not Controlled Action	Completed
Pump station upgrades and rising main construction, Lakes Entrance, Victoria	2016/7646	Not Controlled Action	Completed
Sole-2 appraisal gas well, VIC/RL3	2002/636	Not Controlled Action	Completed
Sole gas field development	2003/937	Not Controlled Action	Completed
Turrum Phase 2 Development Project	2008/4191	Not Controlled Action	Completed
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D seismic survey in the Sole gas field and adjacent acreage in the Gippsland Basin (VIC RL/3 & VIC/	2002/871	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey Program in Bass Strait	2008/4040	Not Controlled Action (Particular Manner)	Post-Approval
Apache 3D seismic exploration survey	2006/3146	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval
Gas Pipeline	2000/20	Not Controlled Action (Particular Manner)	Post-Approval
Gippsland 2D Marine Seismic Survey - VIC/P-63, VIC/P-64 and T/46P	2009/5241	Not Controlled Action (Particular Manner)	Post-Approval
Golden Beach gas field development	2003/1031	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Inspection of project vessels for presence of invasive marine pests in Commonwealth waters off Victo	2012/6362	Not Controlled Action (Particular Manner)	Post-Approval
Lakes Entrance Sand Management Program Trial Dredging	2007/3694	Not Controlled Action (Particular Manner)	Completed
Lakes Entrance Sand Management Program Trial Dredging	2007/3852	Not Controlled Action (Particular Manner)	Post-Approval
Longtom-5 Offshore Production Drilling (Vic/L29), VIC	2012/6498	Not Controlled Action (Particular Manner)	Post-Approval
Longtom South -1 Exploration Drilling	2011/6217	Not Controlled Action (Particular Manner)	Post-Approval
Maintenance Dredging of Oceanic Sand	2011/5932	Not Controlled Action (Particular Manner)	Post-Approval
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Pelican 3D Marine Seismic Survey, Gippsland Basin, Vic	2017/8097	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Exploration in Permit VIC/P41	2001/267	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Survey	2001/206	Not Controlled Action (Particular Manner)	Post-Approval
Soil and Organic Recycling Facility	2005/2216	Not Controlled Action (Particular Manner)	Post-Approval
Southern Flanks 2D Marine Seismic Survey	2010/5288	Not Controlled Action (Particular Manner)	Post-Approval
Southern Margins 3D Seismic Survey VIC/P55	2007/3780	Not Controlled Action (Particular Manner)	Post-Approval
West Seahorse Oil Development Project, Commonwealth waters offshore Victoria	2013/6973	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
All actions taken in response to the current severe bushfires in Victoria.	2009/4787	Referral Decision	Completed
Beardie-1 Field wildcat oil well	2001/469	Referral Decision	Completed
Longtom 5 Offshore Production Drilling (VIC/L29)	2012/6404	Referral Decision	Completed
Longtom-5 Offshore Production Drilling (Vic/L29)	2012/6413	Referral Decision	Completed
Shark 3D Seismic Survey	2007/3294	Referral Decision	Completed
Stanton 3D Marine Seismic Survey	2013/6764	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Upgrade of Corringle Road	2009/4825	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
Upwelling East of Eden	South-east

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence
Dolphins		
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur
Seabirds		
Ardenna tenuirostris Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Likely to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Eudyptula minor Little Penguin [1085]	Breeding	Known to occur
Eudyptula minor Little Penguin [1085]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Breeding	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur
Sharks		
Carcharodon carcharias White Shark [64470]	Breeding (nursery area)	Known to occur
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present

Bioregional Assessments		[Resource Information]
SubRegion	BioRegion	Website
Gippsland	Gippsland Basin	BA website

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.

Department of Climate Change, Energy, the Environment and Water
GPO Box 3090
Canberra ACT 2601 Australia
+61 2 6274 1111